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CARDIAC COMPLICATIONS OF PREGNANCY AND LABOR *

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One of the long-standing obstetric traditions which have been copied from text-book to text-book is that the heart of the pregnant woman undergoes marked hypertrophy, particularly during the latter months of pregnancy. This would seem reasonable on account of the extra work which the burden of carrying on the fetal circulation necessarily throws on the heart, but the recent observations of Stengel and Stanton do not bear it out. These authors assert that there is little, if any, hypertrophy of the heart during pregnancy and that the apparent hypertrophy is due to a displacement of the heart upward and outward, arising from the pressure of the growing uterus on the diaphragm. Accepting their observations as correct, we must assume that the reserve power of the normal heart is sufficient to carry on the fetal as well as the maternal circulation without reacting markedly to the added burden, and, therefore, that in the absence of complications which call on the cardiac muscle for extra work, the normal heart is not subjected to an excessive strain during pregnancy or labor. McKenzie, however, calls attention to certain circulatory changes which are not uncommonly noted during pregnancy and which would seem to prove that the apparently normal heart may react to a greater or less degree to the strain of pregnancy.

These symptoms are: (1) limitation of the field of cardiac response when a sudden burden is thrown on the heart; (2) dilatation of the right side of the heart occurring during labor or shortly after labor; (3) a tendency to edema of the lungs in the latter part of pregnancy or during labor; (4) a tendency to overfilling of the veins of the legs during pregnancy, resulting frequently in marked varicosities; (5) the occurrence of marked pulsations in the veins of the neck.

All of these symptoms must be classed as more or less abnormal and are not to be observed in a patient whose heart is perfectly capable of carrying on its work under the conditions which are present. It is fair to assume, therefore, that the burden which is thrown on the heart during pregnancy must be a considerable one, since otherwise the frequent development of these minor abnormalities would not occur, although it may demand only a minor degree of hypertrophy to preserve satisfactory compensation when the reserve power of the heart is unimpaired. These changes become more or less accentuated in patients in whom the heart is abnormal, particularly in those patients who have a valvular lesion as the result of a chronic endocarditis, and for this reason valvular disease of the heart must be considered as a distinctly serious complication of the pregnant condition.

In speaking of the prognosis of valvular heart lesions complicating pregnancy and labor Guerard gives a mortality of 28 per cent., while other observers place the mortality considerably higher, Rubinsky reporting a mortality of 100 per cent. in his series of cases. These figures, however, apply only to cases in which a failure in compensation had been present for a considerable time or in which the cardiac lesion is associated, either with marked renal changes which increase greatly the amount of work which the heart must do, or with a toxemia of greater or less severity which also throws a markedly increased burden on the heart due to the increased blood-pressure which accompanies them. The high mortality reported by these observers is due to supervening conditions and not to the strain thrown on the heart by an uncomplicated pregnancy, and the prognosis of valvular heart disease complicated by pregnancy is far less grave than these figures would indicate.

The cardiac complications which may be noted during pregnancy are acute endocarditis, chronic endocarditis with valvular lesions and myocarditis.

ACUTE ENDOCARDITIS

Acute endocarditis may arise during pregnancy as a result of a septic infection, acute articular rheumatism or some other acute infectious disease. It is always a serious and often a fatal complication of pregnancy. The symptom which is most apt to accompany acute endocarditis is pulmonary congestion with edema of the lungs, resulting in a distinct tendency to overstretching of the right side of the heart, the cardiac muscle being weakened by the acute infectious process, with the result that serious cardiac failure and syncope frequently occur. In many cases rest and the use of cardiac stimulants may tide the patient over the acute stage, and it may sometimes be possible to prolong the pregnancy to viability or even to term, but in many cases abortion becomes urgently indicated on account of the patient's alarming condition. The prognosis in general is so grave that acute endocarditis must be considered as a dangerous complication of pregnancy and the patient must be watched with care, the uterus being emptied promptly if any sign of cardiac failure appears.

CHRONIC ENDOCARDITIS

Valvular lesions as a result of chronic endocarditis can be demonstrated according to different observers in from 1.5 to 2.5 per cent. of all pregnant women. The effect that the strain of pregnancy will have on the damaged heart, however, is estimated very variously by different observers. According to one observer, only one-seventh of the cases of valvular lesions develop symptoms during

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pregnancy, whereas in another series two-thirds of the cases are reported as showing symptoms. Such a marked discrepancy as is shown by these figures would tend to indicate either a difference of opinion between different observers as to what constitutes a valvular lesion, or a difference of opinion as to what constitutes symptoms as a result of the valvular lesion. Probably both hypotheses contain a certain amount of truth. One author considers a certain heart murmur to be due to a valvular lesion which the next observer considers purely functional, and, similarly, one observer classifies certain symptoms as being due to a valvular lesion, while the next considers them due to the pregnancy and believes that the valvular lesion has had no effect in their causation.

This difference in the interpretation of the signs and symptoms has given rise to a marked difference in the attitude assumed by various observers as to the advice to be given a patient who is known to have a valvular lesion, in regard to the propriety of marriage and childbearing. Probably most authorities would agree that it is safer for a patient who is known to have a valvular heart lesion, even though it is fully compensated for the burdens of her ordinary life, not to become pregnant, since pregnancy throws a somewhat increased burden on the already damaged heart, and, therefore, must tend to exhaust the reserve power of the heart. The ultimate result must be to shorten the patient's active life, even though she may not die during childbirth, and the danger of serious cardiac failure increases with each succeeding pregnancy.

The most conservative figures give the mortality of valvular disease of the heart complicating pregnancy as from 5 to 7 per cent., all cases being included, but this is only part of the story, since it does not take into consideration at all the damage which is inflicted on the heart by the strain of pregnancy and labor and the almost inevitable shortening of the patient's active life or the chronic invalidism, which sometimes ensues as a result of the extra burden which pregnancy throws on the already weakened heart, even though the heart is perfectly compensated for the ordinary conditions of life. From my own observations I should advise a patient who consulted me as to the propriety of marriage and childbearing, that it was her right to do as she saw fit in the matter as long as she thoroughly understood the dangers which she ran; that it was absolutely impossible to estimate accurately the danger in a given case, but that certain lesions showed certain general results and that if the satisfaction of having children were worth the risk to her and her husband, she would be justified in taking that risk with the understanding that it would undoubtedly shorten her active life to a greater or less degree, the danger increasing with each succeeding pregnancy, and that a single attempt might prove fatal or that invalidism might ensue. If the heart were perfectly compensated and no sign of renal failure present, and if the patient had never had any symptoms as a result of the cardiac lesion, she could probably go through one or more pregnancies under careful supervision without serious danger to life, but the immediate prognosis would depend on the way in which the heart reacted under the strain of pregnancy, which could only be definitely determined by the attempt. If the patient had had attacks of broken compensation when not pregnant, she should be most strongly advised against running the risk, and pregnancy should be held out as a most serious danger, since a heart which has once failed under the burdens of ordinary life is almost sure to prove seriously incompetent during pregnancy.

The nature of the lesion must be taken into consideration in giving a prognosis in the given case. Mitral stenosis is much the most fatal of the single valvular lesions, a mortality of more than 50 per cent. being recorded in several statistical tables. Uncomplicated aortic disease comes next with a mortality of from 23 to 25 per cent., while mitral regurgitation, in cases with no history of previous failure, has an almost negligible mortality. Mitral stenosis when complicated by mitral regurgitation has a more serious prognosis than uncomplicated mitral stenosis. These statistics are not, however, based on patients during their first pregnancy, but include a large number of patients who have been subjected to several pregnancies, and, therefore, cannot be accepted as reflecting the danger in the case of a young woman who is anxious to have one child. A careful study of the statistics of the valvular lesions complicating pregnancy leads to the conclusion that each case must be studied on its merits, since the prognosis which must be given in the case of a multipara who has suffered from a failure of compensation in previous pregnancies and in whom the power of cardiac response is lessened must necessarily be much more grave than that of a young primipara whose compensation has never failed.

In regard to mitral stenosis Lusk states that the diagnosis of this lesion in a pregnant woman calls for an immediate abortion for the safety of the patient, whereas Hirst makes the broad statement that with proper treatment he has no fear of heart disease as a complication of pregnancy, making no distinction as to the nature of the lesion or the previous history of the patient. The truth lies somewhere between these two extremes. Undoubtedly many patients have died under care as expert as Hirst can give, and on the other hand many patients with mitral stenosis have gone through a carefully guarded pregnancy with comparatively little inconvenience. Therefore, in giving advice to the individual patient the factors present in her case must be carefully considered irrespective of what the general statistics show. If a patient, although she has a definite valvular lesion, has never had a failure in compensation, if she is at an age at which her powers of recuperation can be counted on to restore a possible break in compensation, and if she understands the importance of taking care of herself during pregnancy, and can be under careful observation such a patient may fairly elect to run the risks of pregnancy, if the satisfaction of having children outweighs in her mind the possibility of death, the inevitable shortening of her life and a possible invalidism following the pregnancy, but it is not fair to advise such a patient that it is right for her to have children unless she fully understands the risks involved.

The impossibility of accurately estimating the efficiency of the cardiac muscle in the individual case renders the problem a very difficult one. I have recently seen a young woman of 25 about six months pregnant who was suffering from her first attack of failing compensation, due to a mitral stenosis. At the time when she was first seen her condition was such that the induction of labor seemed to offer little hope for her life, and palliative treatment was therefore advised. Under absolute rest in bed and the use of digitalis her condition rapidly improved, the edema of the lungs, which was very marked, entirely disappeared and the heart contracted down to approximately its normal size. Two competent internists who saw her in consultation stated as their opinion that there was no reason for interfering with the pregnancy, that she would undoubtedly go through to term without trouble if carefully looked out

for, and would probably deliver herself without cardiac failure. My advice to her was to have the uterus emptied at the thirty-sixth week of pregnancy in order to avoid the dangers of the last month, when the cardiac strain is the greatest. She died suddenly during sleep when about seven and a half months pregnant, a few moments before having been perfectly comfortable and apparently in good condition.

This illustrates the impossibility of estimating the condition of the cardiac muscle, for if any patient should have been able to go through her pregnancy satisfactorily, a young woman who had only had one failure of compensation from which she had recovered promptly and apparently completely should have been able to do so.

The symptoms which we see accompanying cardiac failure are dyspnea, edema of the lungs, general edema, cyanosis and palpitation. The occurrence of any of these symptoms indicates the beginning of a failure of compensation, and must be met promptly by rest and appropriate treatment. In addition we occasionally see a patient who is doing perfectly well and who without other symptoms suddenly collapses and dies, and, therefore, it is never fair to give an unqualified prognosis in any case of valvular lesion complicating pregnancy irrespective of the previous history of the patient.

Unquestionably a great deal can be done throughout pregnancy to improve the patient's chances, and the general hygiene of her life should be kept under careful observation. Moderate exercise in the open air, followed by definitely prescribed periods of rest; a careful diet, including comparatively little meat; free catharsis, and frequent examination of the urine to demonstrate the absence of passive congestion or of supervening renal changes will suffice in most cases to prevent untoward symptoms in young women in whom compensation has never failed. Small doses of digitalis in the last months of pregnancy will also aid in preventing the development of symptoms. Labor should be made as short and easy as possible, even though no symptoms are present. In cardiac cases the patient should always be delivered promptly under ether at the end of the first stage so that the strain of the second stage of labor may be avoided. If the soft parts are rigid so that it seems probable that the stage of dilatation will be prolonged and exhausting, the substitution of abdominal cesarean section for the other methods of delivery has very definite advantages, and should certainly be considered in the case of a primipara. The use of gas-oxygen anesthesia has been advised in these cases as a substitute for ether, but I believe that the increased arterial tension which occurs in the preliminary stages in gas anesthesia may prove the determining factor in producing an acute dilatation which may have serious or even fatal results. I have seen one case in which it occurred, the patient ultimately recovering.

In patients who have suffered from failure of compensation either before or during the pregnancy a more strict routine must be followed. Exercise should be reduced to a minimum and massage substituted. The slightest sign of loss of compensation should be met by immediate delivery, unless promptly restored by rest in bed and the use of digitalis, and the pregnancy should be terminated at about the thirty-sixth week or shortly after if renal changes are present whether of a chronic or toxemic nature. With an attending high blood-pressure it is wiser to empty the uterus early and not allow the extra burden to wear out the already damaged heart. If a patient with a valvular lesion is allowed to go into labor she must be carefully watched throughout, and the labor shortened as much as possible. She should be delivered at the end of the first stage of labor in any case, and earlier if any symptoms arise, since the greatest danger comes during the second stage when the most marked changes in the blood-pressure develop and the strain on the heart is increased. The few hours immediately succeeding delivery are an exceedingly dangerous period since the heart is peculiarly liable to collapse with the drop of blood-pressure which follows delivery.

If an acute failure of compensation occurs during labor it should be met by prompt measures and delivery should be completed as rapidly as possible. Venesection with the extraction of a pint of blood, or possibly more, will take the load off the distended right heart and allow the heart to shrink down. The use of digitalis, strychnin, etc., may prove of great advantage, but the most important thing at this time is to relieve the strain by emptying the uterus as quickly as possible.

ACUTE DILATATION OF THE APPARENTLY NORMAL HEART

There are certain patients in whom no heart lesion is demonstrable during pregnancy and whose previous history contains nothing to suggest the possibility of a cardiac weakness, in whom the changes in blood-pressure which occur during labor, particularly during the second stage, result in acute dilatation of the heart with symptoms which may cause the greatest anxiety. Although it is not possible to determine in advance that a given patient will develop this condition, we can recognize the classes of patients in whom acute dilatation is most liable to arise. Pregnancy is for the average woman a period of general development, and the patient should be in better condition at the end of pregnancy from a purely physical standpoint than at any other time. The patients in whom acute dilatation of the heart is most liable to develop are those who do not conform to this rule. The patients who for some reason are unable or unwilling to take proper exercise during pregnancy and so come to labor in a generally flabby condition are unquestionably the patients among whom we find most of the cases of acute dilatation at the time of labor. A second class of patients among whom this condition is particularly common includes patients suffering from a low-grade toxemia during pregnancy who perhaps develop a slight albuminuria and show other toxemic symptoms, not of a sufficient severity to warrant interference with the pregnancy, but of a degree to cause some apprehension as to the result in the mind of the attendant.

The patients of the first class come to labor muscularly flabby and in poor condition to withstand a severe physical strain; the heart muscle is presumably in a similar condition and, therefore, is unable to respond properly to the extra work which is thrown on it during labor. In the patients of the second class it seems probable that a certain degeneration of the heart muscle has taken place during pregnancy owing to the toxemia which is present, so that the heart is really abnormal, although the abnormality cannot be demonstrated by physical examination. In both classes of patients labor usually goes on normally until toward the end of the first stage or even to the end of the second stage, the heart, however, showing signs of tiring as evidenced by the rising pulse. When, however, the power of response is exhausted acute dilatation takes place with its accompanying symptoms, cyanosis, dyspnea, rapid pulse and the ordinary signs which accompany a failure in compensation of a valvular lesion.

Prophylaxis is of great importance in the treatment of cases belonging to either of these types. The administra-

tion of digitalis in small doses for two or three weeks before the onset of labor will in many cases prevent an explosion, and all hygienic measures which may improve the patient's general condition are of the greatest importance. When labor begins the patient should be watched most carefully from the start, so that if any sign of undue reaction to the strain of labor appears, the patient may be delivered promptly before the severe symptoms develop. The labor shouuld be cut short by operative delivery either at the appearance of symptoms or at the end of the first stage in all patients who are muscularly in poor condition or who have shown signs of toxemia during pregnancy, whether they seem to be reacting unfavorably to the labor or not.

Patients treated in this way will seldom develop alarming signs of acute dilatation. If, however, acute dilatation occurs in spite of the precautions or if the precautions have not been taken, it demands adequate treatment. Venesection, to diminish the strain on the dilated right heart, will prove of great value for treatment in the emergency, while the use of digitalis, morphin and strychnin usually results in restoring compensation promptly, even in cases which seem desperate, and the prognosis is usually good if the patient is adequately treated, but the treatment must be prompt and active to be of value.

MYOCARDITIS

Myocarditis is a condition the diagnosis of which is so difficult that it rarely can be made during life. It may, however, prove a most serious complication of pregnancy and is undoubtedly one of the most frequent causes of sudden death during or shortly after labor, as is shown by autopsy findings. Any unusual cardiac action during the latter part of pregnancy or during labor may be classed as due either to myocarditis or to a neurosis, and the impossibility of determining during the patient's life under which category the symptoms should be placed makes it impossible to give a definite prognosis in the given case. The treatment is unsatisfactory owing to the difficulty of diagnosis. If it were possible to recognize definitely the existence of a myocarditis, prompt delivery at the onset of the unusual cardiac symptoms might result in saving the lives of some patients who, if allowed to complete their term of pregnancy, would otherwise die, whereas the neuroses seldom require treatment. If a careful physical examination reveals nothing abnormal and the urine is negative, it is usually fair to assume, at least in a patient under 35, that the condition is neurotic and will require no treatment.

CONCLUSIONS

1. Any organic heart lesion, even if perfectly compensated under normal conditions, should arouse apprehension and call for constant watchfulness if pregnancy supervenes.

2. In case pregnancy comes as a complication when the heart is imperfectly compensated, the uterus should be immediately emptied, since a heart which has failed under the ordinary burdens of life has no chance of sustaining the added burden of pregnancy.

3. When a heart which has been previously well compensated fails during pregnancy, an attempt must be made to restore compensation by rest and appropriate treatment, but unless the attempt is promptly successful the pregnancy should be ended.

4. If compensation has failed during one pregnancy, future pregnancies should be absolutely forbidden.

5. In any case in which an organic heart lesion can be demonstrated, even though it may have caused no symptoms during pregnancy, labor should be regarded with apprehension, and every measure should be taken to shorten the labor and thus relieve the heart of a serious burden, although it may seem to be doing its work perfectly well.

6. A patient with an organic heart lesion will usually stand an operation well if the operation is performed at a time previous to a failure in compensation. On the other hand, an operation after failure of compensation will often prove fatal in patients who would have stood operation well at an earlier time.

7. Any patient known to have an organic heart lesion who is contemplating marriage should be advised of the dangers pertaining to pregnancy and labor, the prognosis in the individual case depending on the nature of the lesion, the age of the patient and her previous history as regards the efficiency of the heart under normal conditions.

8. It is impossible to estimate accurately the efficiency of the cardiac muscle in any patient in whom a failure of compensation has once occurred, since although compensation may have been promptly restored under treatment, she may die suddenly before, during or after labor, without warning.

9. Labor should be shortened as much as possible in every patient who has a demonstrable heart lesion, although no unfavorable symptoms may have arisen. In primiparas the propriety of a cesarean section to relieve the heart of the strain of labor may be very properly considered in any case, particularly if the soft parts are rigid, since it is poor policy to test the endurance of a given heart unnecessarily.

10. The demonstration of a mitral stenosis should call for the most careful observation. Any sign of failing compensation should be met promptly, and if any condition supervenes which is accompanied by a rise in arterial tension, the pregnancy should be terminated at once.

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ABSTRACT OF DISCUSSION

DR. ALFRED STENGEL, Philadelphia: So far as the individual lesions are concerned I think there can be no doubt that it has been established that mitral stenosis is the most dangerous cardiac lesion. I believe, however, that we should scrutinize statistics a little more carefully, because there are many more cases of mitral stenosis of not very pronounced type which are overlooked than of mitral regurgitation. During the last five or six years I have been inquiring with some care into the histories of pregnancy in women in whom mitral stenosis was recognized late in life, and I have been surprised to find, contrary to my preconceived ideas based on this statistical evidence, how many cases I have met of women who have gone through multiple pregnancies with mitral stenosis. A few figures must not be relied on absolutely. When we are taking cases of recognized cardiac disease and trying to determine the mortality of pregnancy in such cases, we are not to overlook the case of mitral stenosis in which the physical signs are not very distinct. We have no proof that the heart does actually hypertrophy during pregnancy, but what is of much more importance, there is no doubt that the apex of the heart is displaced during pregnancy, that murmurs are frequently produced by mechanical enlargement of tissues, etc., and that consequently the diagnosis of heart disease is easy to make during pregnancy, and when heart disease does not perhaps actually exist.

We have heard of the desirability of therapeutic abortion for tuberculosis on the one hand and cardiac disease on the other hand. I think this is a proposition which the professicn

in general must approach with a good deal of hesitation. It throws open the doors to therapeutic abortion too widely. The desirability of abortion in certain cases cannot be doubted, but we want to be sure that there are no pitfalls such as the possibility of supposing heart disease exists, whereas we are dealing only with functional derangements incident to the pregnancy.

The outlines of the treatment given seem to me excellent and could not be improved. I have seen in consultation patients who have been treated throughout the whole pregnancy for cardiac weakness and who have gone through the subsequent labor very well and I believe on account largely of the careful treatment carried out through the entire pregnancy. We ought to recognize that there is a middle ground. Some cases must be brought to termination at once, but the great majority I think can be allowed to go on. I believe that the author of the paper has exaggerated somewhat the danger that pregnancy may shorten life in women with such cardiac lesions.

DR. HAROLD C. BAILEY, New York: It is very interesting to recall that Dr. Mackenzie was first led to undertake his heart work by noticing that pregnant women frequently had marked jugular pulsation, and he designed an apparatus to take tracings of this pulsation. I think Dr. Newell should more clearly define his position in regard to treatment at term. We see quite a number of patients brought into the hospital with loss of compensation and in labor, and I believe it is very much better to treat them by restoring or attempting to restore their compensation, and allowing the labor to take care of itself. Crystallized strophanthin is similar to digitalis but perhaps does not raise the blood-pressure to such an extent. Deep intramuscular or deep intravenous injection is quickly effective. The dose of the drug is ½ mg., which is about equal to a teaspoonful of digitalis. Reaction occurs in from four to six hours and lasts twelve hours. Probably not more than 1 mg. should be used during the twelve or twenty-four hours. I have used it in labor and it restores compensation. I have used the drug also a great many times in heart disease, and published a paper on it some years ago. The drug is practically inactive in ordinary doses by mouth, but very active by subcutaneous or intramuscular injection.

A NEW METHOD OF TREATMENT OF ULCER OF THE STOMACH *

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My method is a combination of the various beneficial remedial measures proposed at one time or another for the cure of ulcer of the stomach. It is a method of methods. The diet is original. The other procedures, except for details, are not. The diet is vastly different from the very sparse diets of the von Leube and the Lenhartz ulcer cures. My method does not require a stay in bed. The patient goes about his business as usual. Hard work, however, should be forbidden. I have had very little experience with it in the acute cases of ulcer of the stomach, and I do not know its field of usefulness in those cases, my experience having been confined solely to the chronic type of ulcer of the stomach. As a rule those are the cases that yield least to medical means, but my experience has been most gratifying with them. I should also like to state that while some of the patients cured by me had typical ulcers, the majority of the cases were not of that type. They belonged to the type which years ago was called hyperacidity, but which the extensive experiences of surgeons, notably Moynihan, the Mayo brothers and others during the past few years, have shown conclusively to be ulcers. In other words, if a patient complained to me of suffering with pain in the stomach, heart-burn, belching and sour eructations coming on from one to five hours after meals and relieved by the ingestion of food, vomiting or an alkali, I called it an ulcer of the stomach or duodenum, regardless of whether such classical signs as a tender point, occult blood or hematemesis were present or absent. In spite of Moynihan's contention that patients presenting the symptoms of hyperacidity coming on four or five hours after meals, which means duodenal ulcer, must be operated on, as they can never be cured by medical measures, I have repeatedly cured such patients by my method. To those of my medical colleagues who would not be convinced that the syndrome of pain, heart-burn, belching and sour eructations coming on one or more hours after meals means a duodenal or gastric ulcer, I offer my method as a specific for that syndrome. As far as I know those symptoms of hyperacidity not only could never be cured, but they could not even be relieved, except for a little while.

My success has been most pronounced in the simple, uncomplicated cases of ulcer in which the stomach has not been distorted or deformed by adhesions, cicatrizations, perforations, connections with other viscera, or narrowing of the outlet. That such complications do not exist in a given case can be demonstrated by the patient merely complaining of pain, heart-burn, belching and sour eructations coming on one or more hours after meals, without any great suffering at the least indiscretion in diet, without copious and numerous hematemesis, without great loss of flesh and strength; when on physical examination the stomach is found not to be much dilated, not to splash at the least touch, and when the motility is not disturbed. I have cured patients of the more complicated variety of cases in which considerable stasis of food was a factor; and yet at the end of the treatment the patient had regained his normal motility.

Every case that I handled was of long standing, extending for years, and each patient had undergone treatment at the hands of numerous physicians without success. I have a letter from a woman who suffered from a typical duodenal ulcer for fifteen years, stating that the last winter was the first in all those years that she was free from stomach trouble.

There are some cases of very obstinate constipation extending for years in which the syndrome mentioned by me may be obtained by questioning the patient. I thought that the constipation might possibly be due to an ulcer of the stomach, as gastric ulcer patients suffer much with constipation. The treatment failed in one or two cases that I tried, and there is no doubt in my mind that those cases were not ulcer cases.

The treatment must be carried out precisely, to all its details, by both the physician and patient, else it is a failure. My results with clinic patients have been unsatisfactory, while they have been excellent in my private patients. I finally would like to mention here that pain, belching, heart-burn, etc., simulating somewhat an ulcer history, may be present with disease of the appendix, gall-bladder or pancreas. I am also fully aware of the fact that a large number of gastric and duodenal ulcers have their spontaneous ups and downs and their seasons. The patients recover spontaneously under some care with diet, to relapse in the future. Under such conditions one is likely to draw wrong

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deductions as to the efficacy of any plan of treatment. That the patients were cured by me and not spontaneously is evidenced by the fact that under my regimen of treatment every patient invariably came back for the next examination one week later much improved, if not feeling well.

METHOD OF TREATMENT

In devising a plan of treatment for ulcer of the stomach several objects are to be kept in view.

We must give an appropriate diet.

We must give something to cure the ulcer.

We must check the flow of hydrochloric acid which interferes with the healing of the ulcer.

We must combat the stasis of food, if there is any, in case the ulcer is situated in the pyloric or duodenal region with a resulting narrowing of the outlet.

We must combat a continuous flow of acid from the stomach, if there is any.

The ideal diet in ulcer of the stomach must have the following characteristics: It should be bland and nonirritating to the ulcer and the mucous membrane of the stomach. It should cause the least secretion of hydrochloric acid. It should leave the stomach in the shortest possible time. With these qualifications it should combine the highest possible caloric value. These objects are accomplished by the following dietary directions, a copy of which must be handed to the patient:

Eat slowly. Chew your food well.

Patient may take bread (white only); zwieback; toast; soda crackers; corn flakes; farina; cream of wheat; potatoes (mashed only); eggs (soft boiled; may try also hard boiled, if they agree); cream cheese; butter (in plenty); sugar; fish (boiled only, without the skin, without bones); raw or stewed oysters; baked apple (without the skin, without core).

Drinks: Water; milk; buttermilk; matzoon; prepared buttermilk; vichy; weak tea (in moderation only); cocoa.

Patient must not take any other food. No food should be fried. Use very little seasoning; just the least bit of salt.

It is seen that meat and broths are excluded from the dietary, for, as shown by Pawlow, of all foodstuffs, meat extractives are the greatest stimulants of gastric secretion.

This diet must be strictly adhered to for four weeks; then easily digested meats and soups are added. The diet is agreeable to most patients and its caloric value is high enough, so that most of them gain flesh, while I have never seen any one lose. The meats that are added are broiled steak, broiled lamb chops, boiled beef and chicken. The patient should be instructed to remove, while eating, all tendons, sinews, veins, ligaments, tough parts and skin of all meats and poultry. The charred and burnt parts of the top layers of broiled or roast meats should be removed. Meats may be roasted, broiled or boiled, but not fried.

Soups and broths may be of different kinds. They must not contain any vegetables of any sort (unless, perhaps, carefully strained). The vegetable cellulose acts as a mechanical irritant to the ulcer, as well as to the mucous membrane. Moreover, vegetables stay very long in the stomach. Potatoes are permissible. The cooking should be of the simplest kind.

To cure the ulcer I give bismuth. After a good deal of experimentation, as to kind and dosage, I finally settled on the subcarbonate, in doses of 4 gm. (1 dram), to be given once a day in the morning on an empty stomach, in a tumbler of buttermilk thoroughly stirred up. The patient must not have anything afterward for one hour. As shown by radiographs the bismuth distributes itself all over the stomach. It thus soothes and heals the ulcerated surface of the stomach. Bismuth shows cumulative tendencies within the intestinal tract and I found it expedient to clean it out thoroughly once a week by the administration of a dose of castor oil. I order 1½ tablespoonfuls for this purpose.

To check the flow of hydrochloric acid I employ two plans. One consists in giving atropin sulphate from 1/150 to 1/100 grain three times a day ten or fifteen minutes before meals, or extract of belladonna in doses of one-fifth grain. This serves the purpose of diminishing the flow. In addition to it I give an alkali in the form of magnesium oxid in doses varying from 5 grains to 1 dram, according to the condition of the bowels, the average dose being one-half dram. The bowels are usually constipated in ulcer cases, and through the administration of the magnesium two birds are killed with one stone, namely, the acidity is neutralized and the bowels regulated. The bowels must be regulated just right, else the treatment does not work. If the bowels happen to be normal or rather loose, which is uncommon, we give the bicarbonate of soda instead, in doses of 5 grains to 1 dram. Some cases require a combination of the two. The alkali is administered about one or two hours after meals in about 2 ounces of water. Most patients do well on this plan.

For some patients who do not do well on this plan I give instead of the belladonna and the alkali, olive oil in doses of 1 or 2 tablespoonfuls ten or fifteen minutes before meals. Oils, as shown by Pawlow, diminish the secretion of hydrochloric acid. The oil also relieves the constipation. I met no difficulty with the patients taking it. A good oil should be administered. I prescribed a French olive oil.

The stasis of food, if there is any, is met by lavage of the stomach, which is done seven hours after the meal. The best way to manage is to have the patient take his luncheon about noon and eat nothing up to about 6:30 p. m., when the stomach is thoroughly washed out. If there be but a little food present, once a week is sufficient. If there be considerable food present, it should be done twice a week. In addition if there is much food present the patient is instructed not to eat anything until the next morning. This serves the purpose of giving the stomach a good rest over night.[1] In case of food being present seven hours after a meal, which implies a narrowing of the pylorus or the duodenum due to cicatrization, I also massage the stomach and pyloric region, provided there is no contra-indication, such as great tenderness over that region.

The motility of the stomach must be determined in every case of ulcer before starting the treatment. This is done by giving a regular dinner and washing out the stomach seven hours later; the patient must not ingest any food or drink in the interim. If food is present the motility is impaired; if food is absent the motility is normal.[1]

The continuous flow is treated with the same remedial agency, lavage of the stomach once or twice a week. I add bicarbonate of soda to the wash-water. It is needless to remark that washing ulcerated stomachs requires some skill and caution. I never met with any mishaps. In case of a large quantity of food being found in the stomach seven hours after a meal, the patient should be told to have a regular dinner in the evening; the stomach is washed out the next morning before breakfast, and if considerable food be found it means that the patient is suffering with a pyloric or duodenal obstruc-

1. Weinstein: Atony of the Stomach, New York Med. Jour., Aug. 20 and 27, 1910.

tion, and the case is not suitable for medical treatment. A case of this order requires a gastro-enterostomy.

The last step in the treatment is the application of wet compresses to the stomach every night. The patient sleeps through the night with it and removes it in the morning.

This course of treatment is carried out for eight weeks. I make it a rule to see the patient once a week. The patient is to be questioned every time carefully, whether or not he carries out the instructions correctly, for most patients are improved as soon as the treatment is instituted, and are apt to transgress the dietetic rules. I found a good many taking candy, especially chocolates. This is most objectionable, for candy creates hyperacidity. It must be strongly emphasized to the patient that the treatment will lead to no results unless it is carried out correctly to its minor details. About the fourth or fifth week the dose of bismuth is diminished to 3 gm., then to 2 gm. At the end of eight weeks it is stopped altogether, and the patient is discharged as cured with the following dietetic rules to be kept up for at least six months:

Avoid fried foods; fatty meat; sausage; delicatessen; sardines; caviar; cabbage; canned foods; the tough parts, veins, sinews and skin of meats and poultry; the stones, pits, seeds and core of fruits and berries; liquor; radishes; pickle; smoked salmon; herring; the bones of fish; highly seasoned foods.

RESULTS OF TREATMENT

The results are very satisfactory, and the patients who come back one week later, as has been the custom in most of my cases, invariably report that they feel much better. Letters were sent out by me to ascertain the present conditions of the patients and the following is a brief summary of one and a half years' work.

Fourteen patients have been cured entirely up to the present date. After about half a year, four, none of whom carried out the treatment precisely, had recurrences. There was marked improvement in three patients, one of whom had a case with complications; this patient is in very good condition now. With two patients the treatment failed to do good. One was a man over 60 with a typical story of duodenal ulcer and considerable stasis of food, the other a woman who had numerous and copious hemorrhages for several years. There were strong suspicions of malignant implantation in both. Several patients are under treatment at present and are doing well.

All my cases were of long standing, dating as far back as fifteen years, with treatment at the hands of a large number of practitioners. It should finally not be forgotten that ulcers of the stomach and duodenum with complications, such as adhesions, hour-glass contraction of the stomach, narrowing of the outlet, perforations and connections with other organs, can never be completely cured by any method of medical treatment and must have surgical interference for their relief.

The great value of the method is its simplicity and lack of sacrifice on the part of the patient in carrying it out. No patient with a simple superficial ulcer who suffers only from some heart-burn, belching, etc., for a couple of hours a day, will agree to subject himself to stay in bed and carry out the stringent regulations of the von Leube or Lenhartz cure. It is only when the ulcer becomes severe and threatening and occasions a great deal of suffering or vomiting of blood, that the patient will be forced to undergo those cures. No patient, however, will refuse to carry out the simple method of treatment which I propose. This simplicity of treatment, combined with the ease and simplicity in diagnosis as revealed lately through surgical research will, I hope, enable the physician to attack ulcers of the stomach and duodenum in their incipiency and thus prevent the onset of complications and possibly even the malignant transformations of ulcers.

71 East Ninety-Sixth Street.

ABSTRACT OF DISCUSSION

DR. ARTHUR A. GILLETTE, Rome, N. Y.: I endorse what Dr. Weinstein has said concerning the use of atropin and other belladonna preparations in the treatment of ulcer of the stomach; be sure of the quantity of your atropin and guard the physiologic effects.

DR. JULIUS FRIEDENWALD, Baltimore: Ulcer of the stomach is a very serious condition, and should be taken in hand early. A few weeks ago, I reported a series of 1,000 cases at the meeting of the Association of American Physicians at Atlantic City, and attempted to show that if one treated these cases by the rest-cure from 72 to 74 per cent. of cures could be obtained, and if treated surgically, 74 per cent. When one attempts the treatment by means of an ambulatory cure with nitrate of silver, olive oil, bismuth, and so forth, only 40 to 50 per cent. of the patients recover. At the beginning, we have difficulty often in determining just what we have to deal with. The symptoms, however, become more and more aggravated, and then we cannot look on the condition too earnestly. I believe in the efficacy of rest in bed; many failures to cure result from not keeping these patients in bed long enough. Often a stay in bed of three or four weeks is not sufficient and the rest in bed should be prolonged to even six or eight weeks.

DR. CHARLES D. AARON, Detroit: Bismuth treatment of ulcer was emphasized by Kussmaul in the eighties. Alkaline treatment with belladonna or atropin was suggested about fifteen years ago by Riegel, and Cohnheim published a description of the olive oil treatment a few years ago. Dr. Weinstein has done well to advise restriction in the administration of the extract of beef on account of its stimulating effect on the secretion of gastric juice, as proved by the researches of Pawlow. Cellulose, we all know, is very irritating to gastric ulcer; I cannot therefore see any benefit in giving the patented foods, shredded wheat biscuits and corn-flakes, which are rich in cellulose.

DR. ALBERT E. ROUSSEL, Philadelphia: Apparently the proportion of free hydrochloric acid in the analysis of the stomach contents is no longer considered as important as it was in the past. In cases of gastric ulcer this may be normal or there may be a slight diminution; yet in the majority of the cases the free hydrochloric acid is increased in amount. I think what is of great importance is the presence of occult blood in the feces. Of course, an examination of the gastric contents is very important, but I think an examination of the feces is of great importance as well. Whether the case is one of acute or of chronic ulcer of the stomach or duodenum, look for occult blood in the feces. I am inclined to believe that certainly a large number of cases are made decidedly better by the employment of the rest cure. Those of us who are connected with hospitals and with the dispensaries, treating these patients under the so-called ambulatory treatment, know that they do not do so well. They need more rest in bed; this treatment turns the scales in their favor.

I have been teaching medicine for twenty years and I am more skeptical than ever about 70 per cent. of cures by medical treatment. You will find that patients will return to you five, six, eight or ten years afterward with all their symptoms in an aggravated form. The condition had been going on, as shown by the radiographic views, with malposition and maladhesions of the stomach for a long time. If, in the course of three months and in some cases a lesser time, there is no amelioration in the symptoms of gastric ulcer, and with the presence of occult blood in the feces, even when

the symptoms are not absolutely pronounced, I make it a rule to call in a surgeon for operation. I do not believe, however, in calling in a surgeon to make a diagnosis; surgeons rely too much on an exploratory incision to make their diagnosis. We do not need them to make the diagnosis. We call them in when we want them to operate for us. Moreover, I do not think there is any doubt at all but that many cases of gastric carcinoma are found to be present on the seat of a previous gastric ulcer.

DR. LOUIS M. ALLYN, Mystic, Conn.: I do not believe that the method of treatment of gastric ulcer as outlined by Dr. Weinstein is entirely new. I have tried various methods in the treatment of this disease. The ambulatory treatment of gastric ulcer is all right if one cannot get the patient to go to bed. A woman with three or four children to support who works in a factory or in a mill will not go to bed for six weeks. "Go to bed? Who feeds the kids?" These patients must have some treatment that keeps them out of bed and, therefore, I think that Dr. Weinstein's treatment is very good indeed, helping as it does this particular class of patients. In the diagnosis of gastric ulcer many difficulties are encountered. I know of one patient who went to three or four experts in different cities and each diagnosed some different gastric disease. There did not appear to be a true condition of gastric ulcer, but something that simulated it. If the same treatment will cure in these different cases, it does not matter what one calls them. It takes a surgeon to give the true diagnosis.

After we have eliminated the pain I find that autocondensation with the high-frequency current helps these patients. When there have been recurrences after five or six years I think that in nine out of ten cases, they have been due to intemperance in eating or drinking or both. If these patients could be made happy, could be made to sleep well and feed well, I believe that everything would be all right.

DR. A. W. CALLOWAY, Asheville, N. C.: An important point is that we should not expect to get much help from the surgeon in making a diagnosis of ulcer of the stomach. These cases should be diagnosed in the office and not in a surgical clinic.

DR. M. MILTON PORTIS, Chicago: I do not agree with the results stated by Dr. Weinstein. Not all cases of real ulcer can be cured by his or any other method. I have been doing experimental work along these lines and can refer only in brief to my publications. There is one point that is not sufficiently emphasized. In ulcer it is not so much a question of hyperchlorhydria as it is a hypersecretion. If a larger amount is secreted the surplus of free acid will be greater than if a smaller amount is secreted. The percentage secreted remains a constant. The aim then should be to control the amount secreted. If the diet includes meat, secretion will go on for seven or more hours, as compared with two or three hours when meat is excluded. Again, if an alkaline salt is given a half-hour before meals, the total gastric secretion will be diminished, for the alkali on reaching the duodenum reflexly checks secretion in the stomach. Finally, no matter what the type of treatment, it is by far better to start the cure by a sufficiently long enough period of rest in bed.

DR. ANTHONY BASSLER, New York: I agree with what Dr. Friedenwald has said in regard to the treatment of such patients by rest in bed. The heart then beats from ten to fifteen times less often a minute. The stomach is improved by this rest and the amount of hydrochloric acid secreted is less. I think that these are very valuable essentials in the treatment of ulcer of the stomach.

One should be very careful not to make such a diagnosis of ulcer of the stomach merely on the presence of hyperacidity or hypersecretion. The statement has been recently made that a diagnosis of ulcer of the stomach could be made when there was present an increase in the amount of hydrochloric acid and particularly when no food is in the stomach, but clinically this is not a fact that can be depended on alone.

DR. WILDER TILESTON, New Haven, Conn.: The diet tables do not seem to be any different from the ordinary diets that are used against hyperacidity; I think it is a diet that is used extensively by many clinicians. It is impossible to say how many of these cases of Dr. Weinstein will relapse on account of the short time they have been under observation.

DR. J. W. WEINSTEIN, New York: It was argued that belladonna and its derivatives often cause unpleasant symptoms. I can state from a very extensive experience (for aside from the cases reported here I treated a large number of cases at the Vanderbilt Clinic), that in the doses employed by me I have never seen any unpleasant results, save a slight dryness of the mouth in some cases. I did give bigger doses before and I had to abandon them. We should not prescribe belladonna in liquid form and then employ the teaspoon as a measure, for it is well known that the teaspoon contains more than a dram. An exception was taken to what some called my loose methods of diagnosis. My methods of diagnosis of ulcer of the stomach and duodenum are based on the unanimous deductions of the foremost surgeons of the age—deductions that are founded on careful studies and corroborated by exploratories on hundreds of cases. Finally, an objection was offered that there was nothing new in my method. Bismuth was used by Kussmaul years ago, said Dr. Aaron. On the surface, this objection would appear to be valid, but I stated in my paper that my method was a combination of different remedial measures proposed by others. The whole combination, however, is certainly new. There are two methods in vogue in the treatment of ulcer of the stomach, the Von Leube and the Lenhartz cures. It is evident that my method is as far from the method of Von Leube with its stay in bed and rectal feeding, or from the method of Lenhartz with its stay in bed and feeding on raw eggs and milk by the teaspoonful, as north is from south.

I know very well that bismuth, magnesium oxid, belladonna and olive oil were employed in the treatment of ulcer of the stomach. It is from Kussmaul, Fleiner and other authors that I got these ideas, as stated in my paper. But so was potassium iodid recommended and used in the treatment of meningitis! I ask, however, how many meningitis patients did potassium iodid ever cure? I ask again, how many cases of ulcer of the stomach or duodenum did bismuth, magnesium oxid or belladonna ever cure? They never cured and never will. It is only the whole combination in my method that does the work. That combination must be carried out in all its details, else there is no result.

HUNGER PAIN *

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Hunger pain is a sensation of gnawing distress in the stomach coming on several hours after meals. It varies greatly in its intensity and may be described as a mere soreness in the epigastrium, or it may assume the form of a burning pain of sufficient severity to occasion real suffering. It is often accompanied by a feeling of impatience and irritability of temper, which renders it difficult to continue work or to concentrate the attention. It prompts the patient to lie down and may be partially relieved by heat or gentle steady pressure on the epigastric region. It occurs in some cases three hours after meals and continues until the next meal is eaten; or it may persist for an hour or two and then abate without the ingestion of food. It is usually unaccompanied by eructation or regurgitation, but in its more severe grades nausea of some degree coexists and vomiting may occur.

Hunger pain is not an accompaniment of any constant or invariable chemical state of the stomach. As a rule hydrochloric acidity is high or actual hyperchlorhydria exists, but lesser or even very low degrees of acidity are often found. The pain does not depend altogether on

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

the acidity, as many patients are found to have high percentages without it. Notwithstanding these facts it must be admitted that hyperchlorhydria, with its other manifestations, is the condition most frequently found in cases presenting the symptom referred to here as hunger pain.

It is, or may be, associated with gastric ulcer near the pylorus. For many years it was taught that the pain of ulcer of the stomach followed early on the ingestion of food, and it was not until a more intimate acquaintance with gastric diseases was acquired that it became known that burning gnawing distress or pain occurring many hours after meals was not infrequently present with pyloric ulcer.

The location of the ulcer has much to do with the incidence of the pain in its relation to the ingestion of food. If it is in or near the fundus, or is situated proximal to the vestibule, some degree of discomfort or actual pain follows soon after eating. There is a popular impression that hunger pain occurs only with an empty stomach, but it is usually at its height with a highly acid chyme, which passes through the pylorus slowly and with difficulty. The retarded passage of the gastric contents into the duodenum may depend on pyloric spasm from any cause, or on a benign organic narrowing of the pyloric ring. In cases with gastric ulcer near or at the pylorus, or with pyloric irritability and spasm the pain is usually well localized to the pyloric region of the stomach; but in cases having organic stricture resulting in the retention of a large amount of superacid contents, the pain is more generally distributed over the gastric area, and it often extends to the region of the cardia. The distress is not only more diffuse, but supervenes sooner after eating than is the case in ordinary hyperchlorhydria and is more apt to be accompanied by vomiting which gives relief.

The reason food ingestion gives rise to temporary relief in cases of ulcer at the pylorus is probably that its alkaline constituents neutralize the hydrochloric acid and its protein elements combine with it. The nature of the ingesta has a large influence on the incidence of pain. Acids, condiments and coarse, irritating articles of diet are soon followed by marked discomfort, whereas milk and cream, soft eggs and other bland foods give a longer respite from distress. This particular type of epigastric suffering more often attends the common peptic ulcer than the multiple erosions or hemorrhagic erosions described so well by Mathieu.

Hunger pain is, as would be expected, a rather constant result of duodenal ulcer, in which disease the ulcer area is rested and relieved until such time as the acid gastric contents enter the intestine in more copious amounts. We are indebted to Moynihan for emphasizing the importance of "hunger pain" as a symptom of duodenal ulcer. He regards the symptom as positive and diagnostic. He also considers hyperchlorhydria as being equivalent to duodenal ulcer. It should be remembered, however, that duodenal ulcer not infrequently exists without pain, and hemorrhage may be the first symptom to herald its presence.

In the earlier years of my work I was under the impression that this symptom occurred only in hyperchlorhydria and I recall with distinctness the first case in which I found achylia gastrica associated with it. The patient was a man who had definite gnawing, burning pain about three hours after each meal, and who was thoroughly relieved by eating the next meal. Several instances of achylia gastrica with hunger pain have since come under my observation. Some of these cases presented evidences also of chronic gastritis. It may be a symptom of acid gastritis, especially the stenosing gastritis of Boas; it is also found occasionally in catarrhal gastritis in cases in which the contents show an excessive amount of mucus and a low acidity.

It is present in gastrectasia, and is quite often found in cases of gastroptosis, enteroptosis or nephroptosis. Boas has dignified a condition in which pain with an empty stomach occurs as gastralgokenosis. Hunger is not present in this condition, but prompt relief is given by eating. There is little, if any, difference between this condition and that which may be termed hunger pain. The element of hunger is inconstant; at all events, it may or may not accompany the distress. In hyperorexia or parorexia the sensation of hunger may become so intense as to amount to, or merge into, actual pain. Gastric hyperesthesia is closely related to the distress which is relieved by food ingestion, and is, indeed, an important factor in the production of the symptom-complex. Reichmann's disease, or gastrosuccorrhea continua, is also a state allied to those discussed above, and in this affection, contrary to the experience in simple hyperchlorhydria, epigastric distress may be present in the early morning before breakfast.

Not only may this late postprandial gastric suffering result from a variety of chemical and nervous disorders of the stomach, but it is found in patients with disease of other abdominal organs. Of these diseases the most common are pathologic conditions of the gall-bladder and appendix. Among diseases of the gall-bladder, cholelithiasis or cholecystitis with pericholecystitis, possibly involving the pylorus or duodenum, may produce late gastric pain after meals. Among diseased conditions of the appendix, chronic appendicitis with adhesions and deformity is the morbid state frequently underlying the incidence of late postprandial gastric suffering. The explanation of this probably lies in the ready response of the neuromuscular apparatus of the stomach to an irritative focus near or remote from it.

In some cases the symptom is an accompaniment of anemia or of a low state of general nutrition and strength. In such patients periods of discomfort occur from loss of sleep, anxiety, fatigue, both nervous and physical, and from dietary indiscretions with overtaxation of the stomach, from eating too large amounts of food and to the drinking of alcoholic beverages, especially the rich, sweet wines and champagnes.

The treatment of the symptom should be guided by a consideration of its cause, the regulation of the diet, the giving of alkalies and gastric sedatives, the observance of proper rest, or the wearing of a suitable abdominal support, the administration of tonics, and the employment of lavage or operative measures, as the case may demand.

In conclusion, it is my desire to emphasize the need of careful consideration and study of patients who are afflicted with this late postprandial, or anteprandial, suffering in the epigastrium. It seems an error to arrive too hastily at a diagnosis of gastric or duodenal ulcer in these cases, and to hurry the patient to a gastro-enterostomy on the evidence of this symptom alone.

436 Franklin Street.

ABSTRACT OF DISCUSSION

DR. M. A. COHN, Brooklyn: Is the hunger of diabetes mellitus, according to Dr. Jones' classification, a hunger pain? What is the real difference between hunger pain and hunger

plain, unless it be the difference between the physiologic hunger of the normal individual and the morbid hunger as a pathologic condition? Is it not perhaps the degree of hunger that makes the distinction between the two? At all events it is not wise for the practitioner to base his diagnosis on one symptom alone, unless it be one that is always present in a certain disease and decidedly pathognomonic.

DR. WALTER L. BIERRING, Des Moines, Iowa: Unless more fortunate than others, I feel that we have all had some personal experience with the hunger pain referred to by the essayist. I can also recall clinical histories in which errors were made in not properly interpreting the symptom of hunger pain. This is a valuable contribution because it sounds a warning against a too ready acceptance of this symptom as an indication of ulcer or preulcerous condition of the stomach, and emphasizes the necessity of correlating all the symptoms before making such a diagnosis. In this connection it should be remembered that a condition of hyperesthesia is peculiar to some individuals, and this should not be overlooked in interpreting the phenomenon of hunger pain.

DR. WILDER TILESTON, New Haven, Conn.: In my opinion more emphasis should be laid on the frequency of duodenal ulcer as the underlying cause of pronounced hunger pain. Many of these cases show no increase in hydrochloric acid; in the majority of the cases I have seen there has not been an abnormal amount of acid. I think that in this Section we are more likely to overlook these cases and treat them as cases of acid dyspepsia when they should be turned over to the surgeon, whereas in the Section on Surgery the reverse might be the case. I have had three or four patients recently who had been treated from five to twenty years for dyspepsia; they all had definite duodenal ulcers, and all were completely relieved by the performance of a gastro-enterostomy. We should remember the words of Moynihan that persistent hyperacidity that is not relieved by medical treatment is almost always duodenal ulcer. Many of these patients show no symptoms beyond these of hyperacidity; there is no hemorrhage, no occult blood in the feces, and the diagnosis is based mainly on the history.

DR. CHARLES G. STOCKTON, Buffalo, N. Y.: While it is perfectly proper to listen to what Moynihan states about the importance of hunger pain, we must admit that hyperchlorhydria occurs in cases of duodenal ulcer and also that hyperchlorhydria does occur without the presence of duodenal ulcer. This is a point that should be kept before us. We may have hyperchlorhydria with duodenal ulcer; and we may have duodenal ulcer without hyperchlorhydria, and without any suffering whatever. What we should guard against is expecting to have a case of duodenal ulcer simply because there is present a hyperchlorhydria with characteristic symptoms. I hope, too, that Dr. Jones will take time in closing the discussion to make clear to us just what he means by hyperchlorhydria as related to hunger pain; does hunger pain mean simply being hungry?

DR. ALLEN A. JONES, Buffalo, N. Y.: There does occur great hunger among diabetics but that does not constitute hunger pain as described in my paper. What Dr. Bierring has said is correct; there is, in these cases, hyperesthesia, and a hyperacidity is the underlying condition. Among physicians themselves I find this to be a common symptom. In regard to the matter of duodenal ulcer and hyperacidity, or hyperchlorhydria, the point that Moynihan has emphasized I have carefully watched and I do not wish for a moment to detract at all from the importance of the value of this symptom of duodenal ulcer. In my paper I said that the symptom might accompany duodenal ulcer. Duodenal ulcer is a bizarre affair in some cases. There often are no clear symptoms. In some cases hyperchlorhydria is a persistent manifestation. Sometimes hunger pain is uncontrollable, obstinately refractory, and a constantly recurring symptom, not yielding to any treatment, then in the absence of other symptoms, one may regard the condition as one of duodenal ulcer. In these cases, of course, an exploratory operation is the proper procedure. I have seen cases in which a diagnosis of duodenal ulcer was made solely from this symptom; at operation, however, an appendix was removed which was found to be the only diseased structure, no evidences of ulcer being present. I have seen cases diagnosed as duodenal ulcer turn out to be cases of cholecystitis or cholelithiasis.

THE UNRELIABILITY OF UNIMPORTANT MEDICAMENTS *

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The quality of an article or commodity, in general, is directly dependent on demand and on competition. That is, if there be a large demand for an article and if a considerable number of firms put it on the market, then its quality is likely to be of a high order. Further, as a large demand will commonly bring about competition, "demand" is the chief factor which affects the purity of an article. As an illustration of the high quality of widely used commodities it is but necessary to mention the exceptional purity of ordinary table-salt and the fact that granulated sugar, almost without exception, barring a little moisture, approaches absolute purity. As further illustrations of high quality one may take flour, calico, pins and needles. It should further be stated that, although our Food and Drugs Act has had a beneficial influence even on these staple articles, their purity is in the main guaranteed by the large demand. A report on the purity of sugar by the Department of Agriculture[1] showed that of more than 500 samples purchased in the open market in different parts of the country not a single specimen was found which contained added matter, i. e., the department had not secured a single grossly adulterated specimen of sugar. Further, granulated sugar was in general found to be of exceptional purity. The list of every-day commodities which are to be had of a very high quality is a long one and it is very important to note that these articles of high grade are not unduly expensive because of this high quality.

The same conditions apply to drugs and thus we find drugs which are widely used and open to free competition, such as sodium bicarbonate, potassium iodid, quinin sulphate, morphin sulphate, chloroform and alcohol of a very acceptable degree of purity and of a relatively low price, that is, the high quality of these substances has been found practicable without any great increase in cost.

As illustrations of drugs which, in spite of apparent monopoly, are of a high degree of purity, such products as phenacetin, sulphonal and aspirin may be cited. But these products have, after all, enjoyed but nominal monopoly, even in this country of unfair patent privileges. The manufacturers of aspirin have found it expedient to sell a product whose purity would compare favorably with non-proprietary brands with which it had to compete in other countries. But even in this country, where aspirin is a monopoly, it still must compete with other salicylic acid compounds; that is, if aspirin of poor quality were sold, physicians would soon give preference to other related salicylic acid compounds. That medic-

* Read in the Symposium on the Desirability of a More Restricted Materia Medica in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

1. U. S. Dept. Agric., Div. Chem., Bull. No. 13, Foods and Food Adulterants; Part 6: Sugar, Molasses and Syrup, Confections, Honey and Beeswax, 1892.

inal substances which are not sold under competition are unreliable and inferior has been so thoroughly demonstrated by the reports of the Council on Pharmacy and Chemistry that it need not be argued here.

The findings of the Council having forced the conclusion that all proprietary medicines, no matter how reliable the firm which makes any one of them, are well worthy of careful scrutiny, there was a tendency to assume, conversely, that all drugs and medicines not of a proprietary nature were as represented, at least so far as their identity and purity is concerned. This assumption that non-proprietary medicines are to be relied on, because it is to no one's advantage to make false claims for them, has been found unsafe. For, while none would sell these articles under grossly false claims or would adulterate them, because the profits to be derived from their sale is more than offset by the danger of detection, this small demand also operates in another way. The conditions which make it unwise to sell such non-proprietary drugs dishonestly also appear to make it impracticable for the legitimate dealer to go to the pains of furnishing an article that is pure and reliable.

The following is an outline of the findings of the Chemical Laboratory of the American Medical Association which shows that, in general, firms have not considered it expedient or worth while to take any considerable pains to insure that little-used drugs shall be of a high quality. While some firms have shown commendable pride in improving the quality of their products when the findings of the laboratory were brought to their attention, this merely serves to emphasize the general uncertainty of little-used drugs.

Calcium phenolsulphonate is sold by several manufacturers of chemicals. Although it is a definite chemical substance, the examination of the commercial salt showed that the several brands differed considerably in composition and were unsatisfactory as to purity. For example, one specimen which was claimed by its manufacturer, the Abbott Alkaloidal Company, to contain about 4.5 per cent. of water of hydration, was found to contain about 15 per cent. A second specimen which was sent by the same firm with a reiteration of the claim as to its water of hydration content (about 4.5 per cent.) was found to contain only about 2 per cent. The Merck, the Mallinckrodt Chemical Works, and the Powers-Weightman-Rosengarten brands all gave tests for uncombined phenol. It is gratifying to report that the findings of the laboratory having been transmitted to the several firms interested, the Abbott Alkaloidal Company, and the Mallinckrodt Chemical Works now offer a product which complies with the standards adopted by the Council.

Cicutine granules, each of which was claimed to contain 1/134 grain cicutine (coniin), were placed on the market by a manufacturer. As coniin is a volatile alkaloid, it seemed absurd that any manufacturer would attempt to incorporate the free base in granules or tablets. Examination revealed that the granules contained no free coniin but that the combined alkaloid was present in amounts equivalent to about one-half of the quantity of coniin claimed to have been present in the free state.

Copper citrate as found on the market was examined and was shown to vary considerably in composition and purity. The Merck brand contained a small amount of acetate while the others contained sulphate. As a result of this examination, the Mallinckrodt Chemical Works has placed on the market a product free from sulphate and of satisfactory purity in other respects.

Fluidextract of goldenseal, of U. S. Pharmacopeia quality, and otherwise, may be had. As dealers in hats seek to change style in order that both husband and wife must buy new head-covering, so manufacturers of medicines are constantly on the watch for something new. When, therefore, it was found desirable and advantageous to replace certain drug tinctures by more concentrated and less alcoholic liquid preparations, manufacturers at once attempted to prepare fluidextracts from all drugs, regardless of the adaptability of such drugs to this treatment. Not content with this the manufacturer was inclined to prepare two or more kinds of a fluidextract from the same drug, such fluidextracts being intended for a particular use, and thus we find in the price lists of many manufacturers, besides the official fluidextract of golden seal, also a non-alcoholic fluidextract of golden seal and a "colorless hydrastis." While among the fluidextracts are to be found some of the best and most carefully prepared drug preparations, a long list of fluidextracts also contains many that are unreliable. As an illustration of this an examination was made of "colorless hydrastis" and "non-alcoholic fluidextract" of hydrastis as found on the market. It was found that, although "colorless hydrastis" preparations were generally listed with fluidextracts, they were not fluidextracts at all but weak solutions of salts of hydrastin in a menstruum of glycerin and water, evidently intended as a substitute for a widely used nostrum. As to the non-alcoholic fluidextract it was found that out of ten firms' products but one approached the requirements for the official fluidextract of hydrastis.[2]

Keratin is one of the many unofficial drugs entering National Formulary preparations. As a member of the Committee on Standards for Unofficial Drugs and Chemical Products of the American Pharmaceutical Association, I was requested to formulate a standard for keratin, necessary because the Formulary contained directions for preparing the solution of keratin for use in coating pills. As the value of such a coating is dependent on the resistance of keratin to the digestive fluids of the stomach, an academic description of keratin was made to contain a provision requiring keratin to be practically insoluble in hydrochloric acid-pepsin solution. While the description was submitted to a considerable number of pharmaceutic manufacturers and dealers in drugs, no criticism of the proposed test was received. One firm, Lehn and Fink, in particular, went to considerable pains to examine the description submitted, but finally advised that it appeared to be quite satisfactory. Nevertheless the specimen purchased from this firm was found to be almost completely (98.73 per cent.) soluble in hydrochloric acid-pepsin solution. It furnishes an excellent illustration as to the unreliability of claims made for products by those who are commercially interested in them. In this case it is not supposed that the statement was deliberate. Instead, the matter was not deemed of sufficient importance to warrant the precautions which would have been taken if large contracts for a well-known substance, say quinin sulphate, had been involved.

Magnesium peroxid is one of a number of metallic peroxids offered as a substitute for hydrogen peroxid. From the claims made physicians have imagined that these metallic peroxids were as definite in composition and as permanent as the definite chemical formula, ordinarily assigned to these peroxids, would lead one to imagine. But while, for instance, the formula MgO_2

2. THE JOURNAL A. M. A., July 4, 1908, p. 52.

is commonly assigned to magnesium peroxid, the Laboratory's examination showed the several commercial brands to contain but from 12.17 per cent. to 25.18 per cent. of real magnesium peroxid.[3]

Quinin tannate is official in most foreign pharmacopeias, in some of which methods for preparation are given and in which the official product in all cases is required to contain not less than 30 per cent. of anhydrous quinin alkaloid. The methods prescribed by these pharmacopeias, however, were found, in the Association's laboratory, to yield products which did not contain the stated amount of alkaloid. Four commercial brands of quinin tannate were examined. Three of these were found to be of fairly good quality. The other (Merck brand) contained about 9 per cent. of uncombined alkaloid and, consequently, was bitter and unfit for use.

Aromatic digestive tablets are listed by a number of pharmaceutical houses. Among other ingredients the tablets were claimed to contain hydrochloric acid. While it is possible to prepare tablets containing small quantities of hydrochloric acid loosely combined with protein or weak bases (not sufficient to be of appreciable remedial value), the determinations of the acid content of the tablets showed that only one-half of the brands were true to label. The product sold by Parke, Davis & Co., and that sold by Truax, Greene & Co., contained no hydrochloric acid either free or in protein combination, although the labels in each case declared the substance to be present. The Sharp and Dohme product contained only the merest traces of hydrochloric acid.

Bismuth, opium and phenol tablets are marketed by several firms with definite statements as to the quantities of their ingredients, of which phenol is the most important. Various brands were tested for phenol and the quantities present indicated a wide variation from the claimed content. Two years after these results were published, specimens of the same brands were investigated, and it was found that no appreciable improvement in the tablets had been made. Still later, a third series was examined and the tablets found to be, in most cases, no nearer to claim than before. The results found for these phenol tablets as well as those reported for the compound digestive tablets are, without doubt, characteristic of a considerable number of ready-made tablets. As in the case of fluidextracts, the general utility of tablets having been recognized by the manufacturer, attempts were made to put out in tablet form all the remedies under the sun. As many of the remedies do not readily lend themselves to the tablet form and as their small sale does not make a high quality profitable to the manufacturer, the market is supplied with material whose quality depends on chance.

Zinc permanganate as found on the market was found to vary considerably. The examination showed that some of the brands had decomposed, yielding relatively large amounts of insoluble matter and therefore showing a diminished permanganate content. While the best specimens contained as high as 97 per cent. of the theoretical amount, others contained but about 73 per cent. In some cases a decided difference was found between the permanganate content of purchased specimens and the content of those submitted by the manufacturers. If this variation in the quality of zinc permanganate be compared with the general high quality of even commercial potassium permanganate, the unreliability of little-used substances will be appreciated.

535 Dearborn Avenue.

3. THE JOURNAL A. M. A., Dec. 24, 1910, p. 2248.

DESIRABILITY OF A MORE RESTRICTED MATERIA MEDICA FROM THE STANDPOINT OF THE PHARMACIST *

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The point of view of the pharmacist is the point of view of the composite who seeks, finds, identifies, collects, preserves, prepares, standardizes and dispenses remedial agents. And let it be understood and accepted that this tremendous and powerful composite would not be led to seek and prepare this great mass of material if there were no market for it. Do not be misled to believe that the market grows less and less profitable. The contrary is most positively proved by cold, commercial figures, carefully collected, at considerable expense, by our progressive "Uncle Samuel." Therapeutic nihilism has had about as much effect on the misuse of drugs as political nihilism has had on the misuse of governmental power. Rationalism is the better remedy for both evils.

Wherever there is a market, there will be market-men, and the market will invariably afford just that class and quality of goods that is demanded. The competent, composite pharmacist is the market-man for your drug-supply, and I sincerely hope that one of the principal objects of this symposium and of all other such discussions is the bringing about of such reforms as will make it possible for the pharmacist creditably to meet the requirements his important vocation entails.

I trust that, because of the comparatively few years left me wherein I may labor effectively with you and because of the smaller interest that is now mine I may be allowed, without the semblance of presumption, to impress on the medical profession that it needs this "market-man" to whom I have just referred, no matter whether his other name is pharmacist or something else. Neither should the respect paid him be based on what he has been or, maybe, what he is; it should accord with the requirements he must meet and the abilities necessary to meet those requirements. If this respect is vouchsafed him and the recognition such respect should win for him is forthcoming, I believe medicine will have a much abler and more helpful ally in the effort now making for a more restricted and, consequently, a more scientific materia medica in which the pharmacist is, undoubtedly, greatly interested.

But, both conscientious physician and conscientious pharmacist are more sincerely interested in a truer and better materia medica than they are in the mere restriction of the list of agents to be used. It is the betterment they are seeking and the restriction is but a means to the end; at this time, rational and reasonable restriction is imperative and is the veritable key to the situation, as it effects broader pharmacy.

A division of labor and specialization has helped pharmacy in its accomplishments as specialization has helped in other scientific fields. But this is not enough to further and insure better and more constant pharmaceutic work; specialization, even to inconvenience, will fail if there is to be no limit to the demands, especially, in scope. We have just reached the dawn of serious pharmaceutic research; remarkable possibilities are appearing that are most promising. It is possible for one with

* Read in the Symposium on the Desirability of a More Restricted Materia Medica in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

a clear and extended vision, running over forty years of pharmaceutic practice, to estimate more exactly how very much larger is the amount of knowledge one must now have, respecting each individual article, than was formerly required. The intelligent pharmacist is forcefully impressed with his greater responsibility, largely because he is now informed as to the cause and effects of the multitude of changes that occur, due to factors that, not long ago, were entirely unknown, or, if known, were ignored.

I am sensible of the difficulty of citing fit illustrations to an audience like this; some would appreciate examples of bacterial invasion, others light induction or ionic saturation. It will, however, be more consistent to call attention to personal observations of the want of knowledge of so comparatively a simple salt as sodium nitrite, which rather recently has become quite popular. Sodium nitrite is frequently prescribed in combination and because of a want of sufficient knowledge of it by both prescriber and compounder, it rarely gets to the patient without decomposition. Acetyl-salicylic acid and sodium nitrite is a favorite combination.

Medical men and pharmacists have fallen into very bad habits, habits that naturally follow enforced, restricted or superficial knowledge of the agents they are using. There are too many drugs to be studied properly; or, if the physician or pharmacist were fitted or equipped for to-day, to-morrow would bring such a multitude of "new and non-official remedies" that one must, of necessity, forget the "old and official" ones. The 958 of the Pharmacopeia, added to the 589 of the National Formulary, would be easy for the pharmacist if it were not for the eight or ten thousand additional varieties. But it is the "lean and hungry apothecary" who must know the names and something about seventeen thousand remedies and appliances that are in his shop and used in the healing art that should have your sympathy.

Want of control is the pharmacist's sad plight and this is more pronounced in the smaller establishments. Want of control in purchase, in preparation, in preservation — how is it possible? Present methods and practices are not so bad for the large concerns and combinations; they make these possible and are helpful to them. Present methods and practices make of the smaller pharmacist a mere distributor with no incentive to do the better things or to become equipped for a proper control of his stock and a close and helpful assistant to the clinician. In despair, he wails, "What's the use?" and is carried on helplessly in the flood — the veritable flood of an unrestrained and unrestricted materia medica.

A restricted materia medica is most desirable from the point of view of the pharmacist, because an unrestricted materia medica means an untaught, unlearned and uncertain materia medica; more than all this and worse than all this, lack of knowledge and reckless and meaningless use of the materia medica destroy respect for it, and for the users, and this want of respect is, unquestionably, the most detrimental influence imaginable against pharmaceutic excellence. Naturally inactive drugs, undefined and non-standardized drugs, destructive and strangely modifying combinations, non-established and greatly varying doses, all following and resulting from an embarrassing profusion of agents, engender an utterly reckless disregard of all the finer touches that should make pharmaceutic technic a most helpful element in medical practice and an honor to its votaries.

THE DESIRABILITY OF A MORE RESTRICTED MATERIA MEDICA FROM THE POINT OF VIEW OF MEDICAL INSTRUCTION *

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The desirability of a more restricted materia medica, from the point of view of medical instruction, is conceded by every teacher of the subject. No part of the medical curriculum has been subject to more criticism than the teaching of materia medica; the statement is frequently made both by the general practitioner and by members of examining boards that the average medical student is not sufficiently instructed in the science and art of therapeutics, and is especially weak in his knowledge of drugs and their incompatibility and behavior in combinations and in his ability to write prescriptions. The present medical curriculum is by far too extended, so that it is practically impossible for the students to give sufficient time and attention to many fundamental subjects, because many others of minor importance have been introduced into it.

In order to determine to what extent the licensing examinations are influencing the teaching of materia medica, I have made a study of the questions that have been asked by state boards in recent years. This shows as follows:

The total number of questions reviewed were 2,409, which were asked on 510 drugs. One hundred and twelve questions were asked on thirty-one comprehensive topics, such as anodynes, anthelmintics, antipyretics, carminatives, cathartics, cholagogues, counter-irritants, deodorants, depilatories, escharotics, ecbolics, galactagogues, parasiticides, refrigerants, sialagogues, styptics, etc.

Taking as a working basis the schedule of materia medica in the report of the Subcommittee on Pharmacology, Toxicology and Therapeutics on Group A, which contained the important items to be studied thoroughly, 1,244 questions were asked on 103 drugs; on Group B, containing relatively unimportant drugs to which but brief mention was to be made, 485 questions were asked on ninety-five members, and 568 questions were asked on 281 drugs not included in these lists, most of which were of doubtful value. In many examinations the patented name of the drug was used in the questions.

From this examination, it is evident that, while a large percentage of the questions fall well within the list of drugs with which every student should be familiar, still a large number of questions are asked concerning drugs that are of questionable or of little therapeutic value. Many of these drugs have merely a "local vogue" but are included in the Pharmacopeia, which must be the official standard for the druggist, and are therefore considered suitable topics for licensing examinations. The importance that has been given to passing the licensing examinations, as a method of judging the standard of medical schools and the instruction in these schools, has necessarily caused the teaching to be more or less determined by the questions that are asked. This has caused undue emphasis to be laid on the mere materia medica part of the subject, and the students have had a smattering of information concerning many drugs, rather than a thorough training in those that are of the greatest therapeutic value. The effect of the students' attention being called to minor matters is that a great

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deal of time is wasted and the students lose the sense of proportion and become careless prescribers and observers of therapeutic effects. Much of the knowledge that they have obtained in the medical school is of little practical use to them, because they memorize these drugs merely for examination purposes at the expense of definite training in the more important drugs.

It is unfortunate that untrained state board examiners should in this way influence the character of medical instruction. In New York a new departure has been made by the appointment on the examining board of men who are teachers and authorities in their respective lines, and who have as well a clear insight into the questions which bring out a practical knowledge of the subject.

In review of the criticisms that have been made of the teaching of materia medica, it is evident that many of the critics have not appreciated what is the function of the medical curriculum. It is not to turn out skilled pharmacists, but men well grounded in the principles of pharmacology and able to apply these principles to the correction of the pathologic physiology of their patients. It is therefore evident that the major portion of the course should be devoted to the thorough teaching of pharmacology, from both the laboratory and the therapeutic side. To what extent materia medica should be taught is still a matter of discussion. Medical botany and plant chemistry, at one time considered so important, are now of too little importance to be more than referred to in the course. The same applies to descriptive pharmacy and the recognition of crude drugs. If the number of drugs taught were sufficiently restricted, then it would become possible for the student to familiarize himself with the composition and physical characters, with the appearance, odor and taste, with the solubilities, miscibilities and incompatibilities, and with the methods of administration and dosage of those which are commonly prescribed in practice. It is not possible or necessary that the student should know all the preparations of even the more important drugs.

There is both a science and an art in therapeutics. The science of therapeutics should be taught in the medical school and form the basis for therapeutic application. The art of therapeutics is a life-long study and comes only with experience. The medical curriculum cannot turn out a finished subscriber. The effect on the student who studies a large number of useless drugs is that, after graduating, he finds that they are of doubtful value and he immediately begins to look for those of more definite effect. His imperfect training and careless observation cause him to turn to the newer drugs and to accept at their face value the statement of their manufacturers. He barely gets his diploma when his attention is called to these drugs, or rather old drugs with new names, and he is led to believe that they are superior to the standard forms.

The work of the student is increased largely by the want of correlation between materia medica, pharmacology and therapeutics. The present method of arranging the text-books in materia medica and pharmacology is defective. Those that are arranged alphabetically dissociate the drugs from their pharmacologic and therapeutic relations. When the drugs are arranged from the pharmacologic or chemical standpoint, an unnatural classification is adopted, so that the student, at the beginning of his course in therapeutics, has presented to him a new classification based on therapeutic action. This is confusing and entails an extra amount of work. With a more restricted materia medica, a greater degree of efficiency can be demanded of the medical graduate; the instruction would be more definite, and he would also appreciate the fact that while not all of the drugs that are used in the treatment of diseases have been considered, those that are most important and have stood the test of time and experience have been brought to his attention.

That a recent graduate is not a skilled pharmacist—that he has but slight art in prescribing—is conceded, but the recommendation that the teaching of materia medica should be more extended, and that chemistry, toxicology, pharmaceutic laboratory work and prescription-combining should occupy the major time of the course is unwarranted.

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THE DRUGS WE NEED*

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We are fortunately, now, in the midst of an age of careful analysis and investigation of all treatments of disease, and especially of drug treatments. We have passed through the era of absolute faith in drugs and combinations of drugs and mystical mixtures; we have passed through the era inaugurated by some of our best clinicians who were enthusiastic pathologists but therapeutic nihilists, and who spread the belief that drugs had no value; and we have come to the era of pharmacologic research and the knowledge derived from such investigations, which show that many drugs are potent and as such have valuable therapeutic uses.

We have not yet eliminated mystery from medical practice, and still have a belief (unless we very carefully eliminate it) in a multiple mixture, although it may not be a mysterious mixture—we may know its contents. It is so easy to believe when we are told that a drug in this particular combination has a particularly pleasant and efficient activity; or that this particular kind of a drug or preparation will not cause the disturbance that the well-known and well-tried basic drug causes.

A thorough knowledge of the pharmacologic activities of some drugs, and an equal knowledge of the pharmacologic uselessness of other drugs are now necessary in the preparation of the medical student. Having such knowledge, he will not make the mistakes which have long been made in the use of drugs. It is being attempted by the state examining boards and by teaching institutions to limit the materia medica questions at state examinations to drugs that have positive value. Such questions cannot be made too strong or too difficult, as such knowledge shown by the applicant to practice medicine is the greatest possible protection to the public against the misuse of drugs, and would soon cure the use of multiple mixtures, and the use of mixtures, the ingredients of which are not known. In other words, instruction in, and examination on, useful drugs only will be a cure for the mistake of using nostrums, proprietaries, or even absurd and useless pharmacopeial preparations.

What drugs shall be used, and how? The only way to discuss the subject is to classify drugs under the objects at which they are aimed. It is advisable to

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classify drugs, not chemically or by some particular pharmacologic activity, but according to their therapeutic use. In other words, when we wish to meet an indication, what drug shall we use?

I do not think it longer profitable, although I have, as is known, done my share of it, to urge the use of many Pharmacopeial and National Formulary mixtures. There is no question that these books furnish formulas, and each druggist can well prepare such formulas, to satisfy the desires of every physician, and thus many times prevent the necessity of specifying some particular proprietary mixture. My desire is to go one step farther, and state that we need these mixtures, whether Pharmacopeial, National Formulary, or proprietary, very rarely. I do not say that such mixtures have no value, but I do say that the active drug of the mixture can generally be given in a very simple manner and the results obtained be perfectly satisfactory, and the treatment be much more scientific.

I will not discuss the long, ever-varying list of drugs used as antiseptics and dressings, nor those used as parasiticides and escharotics, nor those used for various conditions of the skin; but will take up for consideration the drugs that are to be administered internally. In the discussion which follows I take it for granted that we always desire the best drug to meet the indication, and never desire a second and third-best drug; also, that we want the best preparation of that drug, and would not often desire a second-best preparation. In other words, we need no second- and third-rate drugs, and no third- and fourth-rate preparations. It is immediately seen that I have eliminated about three-fourths of the Pharmacopeia from our discussion.

The drugs that we need to diminish secretions, viz., astringents, are: alum for local use, rarely as a mouth-wash or gargle, never internally; bismuth subcarbonate or subgallate (subnitrate may cause, in rare instances, poisoning); silver nitrate internally only intermittently for an ulcer of the stomach or for some chronic inflammation of the stomach, and there is no other use for silver internally. Copper seems to have no positive use internally, and the only valuable salt is the sulphate as an emetic or as a local astringent. Zinc sulphate is the only zinc preparation we need, and should be used as an emetic or locally. There is absolutely no use for zinc in any form whatever internally. Tannic acid is suitable for local use and some of the newer combinations of tannic acid for internal action; rarely, perhaps, gallic acid for action after absorption.

Of drugs to increase the appetite, i. e., stomachics, if we cut out the useless bitters of the Pharmacopeia and their preparations and the large number of proprietary mixtures said to be reconstructive, tissue-builders and appetizers, we have eliminated nearly one-third of the proprietaries that are brought to us, and that eliminates one-third of the National Formulary substitutes. In my opinion we need none of these. If it is desired to give a bitter alcoholic cocktail before a meal, the compound tincture of gentian of the Pharmacopeia is efficient. The compound tincture of cinchona, carrying with it a little more medicinal activity, is another similar cocktail preparation. These drugs furnish all the bitter that is necessary to start an appetite. Very much bitter has been found to inhibit gastric digestion rather than to promote it.

One drop of the tincture of nux vomica in a wineglass of water, taken before a meal or during a meal, will answer all the bitter purposes of any preparation offered as an appetizer.

Now as for iron, let me first state my belief that there is no organic iron that will do as much good as a simple inorganic iron; also, that 0.20 gm. (3 grains) of an iron salt will present to the patient, who is not undergoing red blood-corpuscle deterioration in his system, more iron than he can metabolize during twenty-four hours. Therefore, large doses of iron are not needed. The main point of the organic irons, ordered at great expense and furnishing enormous profit for pharmaceutical houses, is that they furnish less iron than the physician has been accustomed to order of an inorganic salt. The patient who could not take the inorganic salt does take such an organic preparation without unpleasant symptoms. If the dose of the inorganic salt is reduced to 0.03 gm. (½ grain), three times a day, it will be exceedingly rare to cause any symptoms that are noticeable or unpleasant.

While each individual physician has a pet iron salt which he prefers to use, still, there is no real chemical or physiologic reason why a certain few are not all that we need for internal use. These few are the reduced iron, the Blaud pill, saccharated iron oxid (*Eisenzucker*) and the tincture of the iron chlorid. Except the last, these are but little astringent and are pleasant to take, and any one of them can do everything that any iron can do in the system. The strongest iron we can administer seems to be the tincture of the iron chlorid. It is never necessary to give enormous doses, and one drop of the tincture of iron, either in the syrup of citric acid and water or in freshly made lemonade, is of course not noticeable, and yet will give all the iron that is required for physiologic purposes. Five drops of the tincture of iron in fresh lemonade every six hours, even for a condition like diphtheria, is entirely sufficient, and even a child will rarely notice that he is taking anything disagreeable. The sugar of iron tablet is almost a confection; the child enjoys it. We can cut out of the Pharmacopeia, therefore, as far as our needs go, about thirty iron salts and preparations.

As to digestants, physiologists tell us that pepsin is rarely needed in the stomach, and that the starch digestion is generally sufficient. Therefore, pepsin and diastase are not needed. The physiologic chemists tell us that pancreatin is probably rendered inactive in the stomach. Certainly any starch digestant and pancreatin will act in the stomach only until free hydrochloric acid or a considerable amount of acid peptones are present, and this will occur anywhere from one to one and one-half hours after food has been taken. They tell us that proper chewing of the food, to mix the starchy food well with the saliva, is all the starch digestant that is needed. Dilute hydrochloric acid often is needed, and this is generally efficient. Pancreatin, then, is of value only as a predigester of food before it is taken. And again we have cut out a considerable number of Pharmacopeial preparations and a large number of proprietary preparations.

While cod-liver oil is, perhaps, one of the most easily digestible of oils, it is, nevertheless, so likely to cause indigestion that its value has been greatly overestimated. Butter and cream are generally sufficient, with, perhaps, olive oil added in some instances, to increase nutrition. And again we rule out the multiple proprietary emulsions of cod-liver oil.

The large number of glycerophosphate elixirs are probably not needed, neither are the lecithins; and there is practically no difference between a lecithin and a glycerophosphate. We do not need an elixir that contains alcohol or a lot of glycerin, and sodium glycero-

phosphate does not seem to be of value. Calcium glycerophosphate, ordered in dry capsule or in tasteless powder, will do all of the work that the various wonderful elixirs will do. It may supply a need to the body, while calcium is a sedative to the nervous system. This is again a touch of simplicity.

I am convinced that nothing will decrease the perspiration like atropin; therefore I see no reason, except for the local use of alcohol, for using any other drug.

To increase the amount of urine, nothing is better than water; next caffein in some form, digitalis, buchu, broom and perhaps squill.

To render the urine alkaline there is nothing better than potassium citrate; and there is no wonderful action in the A B C mixture. Potassium citrate is the pleasantest, and, in a proper dose, efficient. We do not need the others.

As antiseptics for the genito-urinary tract, hexamethylenamin, methylene-blue, salol and salicylic acid are efficient.

As a stimulant to the genito-urinary tract, the oil of santal is as satisfactory as anything yet discovered, and is as little likely to disturb the digestion, and we can do away, in my opinion, with the nasty copaiba, the unnecessary cubebs and the Pharmacopeial and proprietary legion of genito-urinary stimulants.

Outside of iron and thyroid there are no efficient emmenagogues. For the pains of menstruation, after studying all the various Pharmacopeial, National Formulary and proprietary mixtures, the valuable drug seems to be alcohol. I believe that almost every preparation offered for that purpose contains alcohol. It is generally ordered given in hot water; and the dose is sufficient to make any young girl or woman feel better, or at least be indifferent to her condition. In other words, the dilating effect of the alcohol, its slight anesthetic properties, and the mental indifference which it causes, I believe, give the keynote to the satisfactory action of all of our many and multitudinous dysmenorrhea mixtures. Therefore, let the patient have gin or alcohol, and color it, or fool her as desirable.

As for drugs used to act on the respiratory tract, and first, those used to increase the secretion of mucous membranes, i. e., expectorants proper, when we name ammonium chlorid given in small doses, ipecac and iodids, we have covered all that are of any great value. Ammonium carbonate is too irritant, and is not needed. If we need a cardiac stimulant of the ammonia type, the aromatic spirits of ammonia is better. If we wish to decrease the secretion of the mucous membranes of the upper air-passages, ammonium chlorid in fair-sized doses, atropin, terpin hydrate and opium, or any of its alkaloids, will be efficient. In my opinion all of the old so-called expectorants served up in miserable, bad-tasting syrups are not needed, are useless and are bad for the stomach. Nothing can be done in the expectorant line that cannot be done by the above-named drugs. Ammonium chlorid is best administered in a sour syrup, or given in lemonade.

To relax spasm in the respiratory tract, as in asthma, atropin, bromids, chloral, gelsemium perhaps, morphin, nitroglycerin or other nitrite, and scopolamin (hyoscin) are most efficient. Any combination that is of value for asthma generally contains one or more of these drugs. I cannot find any action of belladonna, stramonium, or hyoscyamus that is not that of either atropin or scopolamin; therefore with these two alkaloids, it seems to me we can do away with all of the other preparations of these three closely allied drugs. There are no activities of these drugs that are not represented by one or both of the above alkaloids.

The greatest bugaboo in medicine is in the proper use of drugs that act on the circulation. These are probably more misused than most any other potent drugs.

It is well to subdivide the drugs that act on the circulation into those that are stimulants and have immediate activity, and those that are tonic and have prolonged activity. The stimulants are camphor, ammonia, strychnin and caffein. Caffein and strychnin have prolonged activities, and really are stimulo-tonics. Caffein in any form acts positively on the circulatory and nervous systems. Strychnin is very much overused. Camphor is one of the best cardiac stimulants that we possess. Alcohol may be of great value in relaxing the peripheral circulation and the abdominal circulation and thus relieving a laboring heart.

As a cardiac tonic, nothing equals digitalis; and its second is strophanthin, given intramuscularly or hypodermatically. If the dose of digitalis is properly regulated, and the preparation is a good one, there is no need for, as there is no real physiologic value in, any of the other so-called cardiac tonics. They may all be eliminated from the Pharmacopeia.

To contract the blood-vessels, suprarenal active principle, pituitary active principle, ergot, atropin, and the drugs already mentioned may be used in proper manner and at proper times.

To dilate the blood-vessels, nitrites in some form, iodids, thyroid, aconite if needed, and chloral occasionally represent the drugs of value.

The so-called antispasmodics are really cerebral stimulants and exciters. The reason they are antidotes to spasmodic conditions, such as hysteria, is that they probably stimulate the brain to better control. Camphor is perhaps the best. The advantage derived from an asafetida or a valerian is probably either from the alcohol contained in many of their preparations, or else is psychic, from the disagreeableness of the odor. They are really of no positive value, and many other treatments, or no treatment at all, as Christian Science, would be of as much value.

To depress the central nervous system, so-called depressomotors, we have any of the coal-tar products, bromids and chloral and opium, if we must. As to coal-tar products, either for analgesic properties or for antipyretic properties, of all the large list presented we still have no better than acetanilid, antipyrin and acetphenetidinum (phenacetin). Acetanilid, on account of the dose being small (and the dose should always be small), is the most valuable. It is a very useful drug when ordered and used by the physician for a particular condition. It is the most misused drug, on account of entering into so many nostrums.

Among drugs to produce sleep — hypnotics — there is still none better than chloral; all hypnotics must be graded from this old drug. Chloralamid may be a little improvement on it in a way, but the dose must be larger, and its action is often not so efficient. Bromids are valuable when they are needed. Paraldehyd in certain cases may be used, and the hypodermatic injection of scopolamin has a powerful activity which we would not like to lose. The idiosyncrasy of some patients to scopolamin and atropin, however, must never be forgotten.

Of the newer hypnotics, veronal-sodium seems to be the best and safest. The dose of veronal is smaller than the dose of sulphonal, trional or other synthetics, and, therefore, it causes less irritation of the kidneys during its excretion. The sodium combination seems to be less

depressant than the veronal itself, and it seems the best of these preparations to use. If this is the best, then we need none of the second- and third-rate drugs of this class in the Pharmacopeia.

There seems to be no reason for the many bromids. The sodium bromid is the best; potassium bromid is distinctly more disagreeable; strontium bromid is expensive, and the reason of its lack of disagreeable stomach-effects is that it is absorbed less rapidly; and zinc bromid is unnecessary. This again simplifies the Pharmacopeia.

Of all the iodids the sodium iodid seems the best. Potassium is always depressant; sodium is rarely so. Therefore, other things being equal, where the drug must be given for a considerable length of time, the sodium salt is the one which should be preferred. All the various new iodids (iodids without their sting) put on the market only mean a smaller dose of iodid; that is all. If the dose administered of the straight sodium iodid is diminished to what the patient would absorb from one of the proprietary preparations, the unpleasant symptoms will be found not to be caused. The sodium iodid should be given either in water or camphor water, or a saturated solution may be given in milk or water.

Of the colchicum preparations we need only the best liquid, which is probably the wine of the root, and the alkaloid, colchicin. We certainly do not need the number of preparations of it in the Pharmacopeia.

Of the very many preparations of mercury in the Pharmacopeia, at least half could be abolished. I will not designate which half or which third I would deem most valuable, because the differences in opinion are so very great I would simply start an unprofitable discussion. But there is no difference in mercurial action. It is only a question of dose and which preparations, and a few, as soon as one learned how to use them, would have the same action as have the many.

Of all the salicylic acid preparations offered, it is simply a question of regulation of the dose. If any of the proprietaries furnish salicylic acid without its sting, this means that the substance is absorbed very slowly, and the dose given is very much smaller. If the dose of the sodium salicylate is made smaller, the absence of unpleasant symptoms would be the same. If, on the other hand, in rheumatism it is necessary to push a salicylic acid preparation, these preparations that are said to not cause symptoms will cause symptoms. It is only a question of dose.

I am not a drug nihilist. I believe thoroughly in the activity of drugs and thoroughly in their value, but I deplore the profession being fooled by promoters of so-called new drugs and new synthetics, when, if the reliable Pharmacopeial drug is properly used, it is perfectly satisfactory.

I do not for one moment wish it understood that I do not believe in looking into and investigating every new single drug (not mixture) that is offered. Every little while we find something that is of great value, such as hexamethylenamin, phenolphthalein, veronal, salvarsan, perhaps the new synthetic suprarenal principle; but I wish to stimulate a criticism, an honest criticism, of every drug or preparation that is presented. If it is a mixture, we should analyze the formula and draw a line through every ingredient that is of no value, and see what is left. It is many times the very drug of the Pharmacopeia that we have all been long using. The rest are veils to befog our discovery that the only active drug of the mixture is such a simple, common, every-day affair.

252 York Street.

THE WORK OF THE COMMITTEE ON USEFUL REMEDIES *

M. I. WILBERT
Secretary of the Committee
WASHINGTON, D. C.

The Council on Pharmacy and Chemistry of the American Medical Association has been repeatedly though erroneously criticized for being destructive rather than constructive in its work, and not a few medical practitioners have pointed out the difficulty of consistently following the efforts that are being made to improve on the conditions now existing in relation to the use of drugs as aids in the prevention or the treatment of disease.

The difficulties that would be encountered by a physician in active practice in any attempt to differentiate between useful and useless articles will suggest themselves to any one who will take the time to look over one or more of the current price-lists of drugs and proprietary medicines. The many thousands of meaningless names found in such a list are disconcerting to even the best-informed medical practitioner, and to one who can give only a limited amount of time and thought to the subject they must be quite as confusing and meaningless as the names of so-called patent medicines are to the ordinary layman; since this is so it need not surprise us that the physician absorbs much of his incentive to use a given drug or preparation in much the same way that the layman does—from the say-so of others in advertisements or the so-called standard works on the subject of materia medica.

The present-day status of the use of medicines has been designated as consisting of series of vicious circles: Patent medicines are used by the laity because they are advertised by manufacturers, and they are advertised by manufacturers because they are used by the laity. The closely related proprietary medicines are prescribed by physicians because they are advertised in medical journals, and they are advertised in medical journals because this leads to their being prescribed by physicians. Official remedies are official because they are endorsed by text-books, and are endorsed by text-books because they are official.

Up to the present time little or no attempt has been made to classify systematically the more useful or more promising medicaments. Even the teachers of materia medica in medical schools are helpless in this respect because of the fact that the several state medical examining and licensing boards are likely to ask questions on all sorts and kinds of medicaments, and teachers of materia medica of necessity feel that they must teach at least something about all of the different official articles and many of the more widely advertised non-official preparations.

In the past the Council has endeavored to exercise its influence with the revisers of the Pharmacopeia and the National Formulary and has striven to induce the compilers of these books to restrict their scope to articles of established value. These efforts have, however, been futile, largely because of the fact that both the U. S. P. and N. F. are accepted by law as the standards for the articles which they contain, and it is felt that physicians who use obsolete or inert drugs have an equal right to

* Read in the Symposium on the Desirability of a More Restricted Materia Medica in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

standard remedies as physicians who confine themselves to articles of known and recognized value.

With a view of arousing the interest of medical practitioners in the subject the Council more than a year ago appointed a committee to compile an authoritative list of the more important medicaments and then to submit this list as a basis for the teaching of materia medica in medical schools and for the examinations on materia medica subjects by state examining and licensing boards, so as to foster the routine and more extended use of these articles by practicing physicians generally.

The possible restriction of materia medica teaching to articles of acknowledged value has been discussed on various occasions, and several attempts have been made to outline a reliable materia medica list. One of the more recent attempts in this connection was made by the Council on Medical Education of the American Medical Association several years ago. This list, somewhat augmented, was selected by the Committee on Useful Remedies as the basis for its work, and the resulting list then sent to the teachers of pharmacology and therapeutics in medical schools and colleges, the secretaries of state medical examining and licensing boards, members of state boards whose addresses were furnished by the secretary and to a number of general practitioners who had replied to previous inquiries. On the basis of the replies obtained, a second list was compiled and discussed in THE JOURNAL for Dec. 9, 1911, with the request that members of the American Medical Association who might be interested send in their opinions regarding it. The list thus secured was reviewed by the members of the council present at the annual meeting in February, 1912, and is now ready to be offered tentatively in the form of a manual for ready reference, with the request that medical practitioners generally make such suggestions for additions and deletions as would tend to make the final list fully representative of the best in the materia medica of American medicine.

Eventually, it is expected to publish a critical review of the actions and uses of the several drugs included in the list, so as to present in as complete a form as practicable the present status of our knowledge regarding the drugs and preparations that are discussed in the book.

The preparation of such a book will necessarily consume considerable time, and the proposed tentative publication of a manual is for the twofold purpose of keeping the subject before American medical men and of securing their cooperation in the final compilation and publication of the more comprehensive work.

Twenty-Fifth and E Streets, N. W.

ABSTRACT OF DISCUSSION

ON PAPERS OF MESSRS. PUCKNER AND HYNSON, AND DRS. LEFEVRE, OSBORNE AND WILBERT

DR. F. E. STEWART, Philadelphia: Dr. Osborne for a long time has been eliminating from the Pharmacopeia. Fortunately, he has still left a small number of drugs to be used by the revision committee. I am in favor of much that he has said. It would be a great advantage to those of us who are teaching materia medica if we could limit the Pharmacopeia to really useful drugs, but, unfortunately, there is such a difference of opinion among therapeutists that it would be difficult to accomplish.

The next question is that of introducing new materia medica products by advertising. All will admit that the demand created by advertising has proved largely fictitious and ephemeral. It is only the secondary demand that really comes from merit. For the introduction of the new products by advertising, an enormous outlay is required. It is necessary to obtain higher prices to pay for this advertising. To protect the investment of capital, monopoly is considered necessary by some manufacturing houses. This is usually obtained by patenting materia medica products. In protecting advertised products from injury to sales sometimes resulting from the original research of scientific men, certain manufacturers deem it necessary to threaten such investigators with lawsuits, if the evidence published is of an unfavorable nature. If members of the profession cannot impartially discuss new materia medica products without danger of lawsuit, how can we expect progress in materia medica science and in the arts of pharmacy and drug therapeutics?

In my paper read before the American Medical Editors' Association, I suggested a plan I have been advocating for the past thirty years, namely, the establishment of a strong central board of control, in which the manufacturing houses, the medical and pharmaceutical journals, and the professions of medicine and pharmacy could be represented. Some of the functions of the proposed board would be the censorship of materia medica advertising and of the literature and labels of manufacturing houses; also the investigation of the therapeutic claims relating to new materia medica products by collective investigation, using the working bulletin system for that purpose. The plan differs from that of the Council on Pharmacy and Chemistry in that it is cooperative rather than judicial. Its work would be supplementary to that of the Council and in harmony with it. I do not believe we fully realize the enormous amount of good accomplished by the Council. The Council ought to have the backing of every manufacturing house in the country. By attacking fraud in pharmacy, it is driving out unfair competition, and making it possible for honest manufacturers and their experts to obtain an honest living.

DR. W. D. CALVIN, Fort Wayne, Ind.: Much of the time spent in studying most of the drugs that we find in our materia medica to-day is wasted.

Sometime ago, I read a paper before our society on the misuse or abuse of drugs and I secured the consensus of opinion of about seventy members of our society concerning the drugs they thought were most misused. We arrived at the following conclusions: First, many drugs are overused; second, many drugs are misused; third, many drugs should more frequently give place to other and better therapeutic agents. I said, "If I ask you, as members of this society, to write down ten or twelve drugs with which you could conduct 90 or 95 per cent. of your drug therapy, the result would probably be that you would discover that you would not require that number." If I were to ask the same question to-day, you would write two or three rapidly and go more and more slowly as you approached the tenth, if, perchance, you ever reached it. I am free to say that 95 per cent. of my drug therapy is done with fewer than ten drugs and I believe that this is the experience of every man here to-day. I do not believe less in drug therapy than I did when I left college. I have much less confidence in most of the drugs found in the materia medica than I had at that time, but to counterbalance that I have much more confidence in the few I use than I had at that time. Is not that your experience? Why should we all go through this constant weeding out that we must individually do after we leave college?

Shortly after leaving college I passed the State Board of Minnesota, considered a hard board at that time. Three of the questions in materia medica were concerning drugs that I have never used from that time to this. The examination simply tested us out to see if we had gone through the pages. Was that practical? No. Many of our state boards are still asking these questions. Among the state boards of the United States appointed through political pull many a member is not able to answer the questions he asks. That is not true, of course, of the boards that are appointed at the suggestion of our state medical societies and not entirely true of the others. I would not make a sweeping statement of that kind.

DR. HOBART A. HARE, Philadelphia: The statement was made in the report of the committee that certain drugs are

placed in the text-books because they were found in the Pharmacopeia and that they were placed in the Pharmacopeia because they are in the text-books. This is not accurate. The drugs which are official are the drugs which pharmacists and physicians and the laity all over the country call for with sufficient frequency and constancy to make it necessary that both the physician and layman should be protected and should be sure of getting a real drug or a definite compound of a drug. The drugs are not put into the Pharmacopeia because they are in the text-books, but it is true that they are put into the text-books because they are in the Pharmacopeia, although I do not know of any text-book which includes all the drugs that are in the Pharmacopeia because the practicing physician and the man writing a text-book find many drugs in the Pharmacopeia which they cannot endorse and which they believe to be largely inert. I am in accord with the statement that the list of drugs to be taught to students is ridiculously large. The average physician will get along better if he uses ten or twelve drugs, but that some variations of these drugs are unnecessary I do not believe. In medicine one preparation suits the needs of a patient better than another. The one may not be different from the other in its physiologic action when it is absorbed, but it is different in appearance or taste or different in the ability with which it disturbs or agrees with the stomach. There is danger of antagonizing the experience of men in general practice by being too dogmatic in regard to these points.

Half of the number of hours that I devote to lectures could be more advantageously employed if there were no state boards because, like Dr. Calvin, I am forced to teach facts which will not be used in practice merely because they will be used in state board examinations. A few years ago a member of a board asked what the dose of santonin was for a babe of 8 months. I have never yet seen a babe of 8 months with roundworms. I would not have known what to answer myself. When I wrote and protested the examiner replied that he did not believe that my criticism needed further consideration. Dr. Councilman told me that he believed that the best form of examination—a practical one—was that used in Massachusetts. This means that the man who can prove to the board that he has practical knowledge will be licensed, whereas most of our boards ask questions, correct answers to which do not prove that the applicant is a competent physician to practice.

DR. S. SOLIS-COHEN, Philadelphia: Potassium citrate may be the only diuretic salt needed at Yale, but some of us have formed the habit of using potassium acetate occasionally. Why should the American Medical Association say, even to Philadelphia barbarians, "You must not use 'tweedledum'; you must accept the dictate of Olympus and employ 'tweedledee'?" This question is not so simple as one may deem in looking at it from the purely personal point of view. I have no objection to Yale's restricting itself to twenty drugs, or to Oxford's restricting itself to four, or to Harvard's restricting itself to none; but if the patient happens to be under my care and my judgment tells me that I shall use a remedy which is outside of the twenty or the four that are sacrosanct, or even the nine hundred and forty that are officialized, what is my duty under the circumstances? To bow to some prohibitive restriction imposed in ignorance of the existence of that patient and of the conditions that he presents, perhaps in ignorance of the existence or of the influence of the remedy I propose to use? Maybe so—but I do not see in that light. My patient is entitled to my knowledge unhampered by orthodox, or even official, ignorance. For example, I have had an interesting discussion lately with regard to aspidospermin. This potent drug does not find place in the Pharmacopeia of to-day; it probably will not find place in the Pharmacopeia of next year or the year after. Aspidospermin, therefore, omitted from the Pharmacopeia to please restrictionists who know nothing whatever about it from personal observation, must not be prescribed by me on account of such omission, although I should not know how to treat certain cases of asthma without it. I know how asthma *is* treated without it, of course, but I should not know how I could give my patients the benefit of the knowledge and skill they are entitled to. There is no objection to any physician restricting himself to the tools that he knows how to use; but there is every objection to his attempting to restrict some other physician who has other, and perhaps better, tools and methods. The Pharmacopeia should admit every drug that is known to be of advantage in the treatment of the sick, no matter how seldom it is prescribed and no matter how many other drugs there may be which have similar influence. On the other hand, it is true that we can simplify the teaching of materia medica and improve the practice of therapeutics by confining our work in the schools to a certain number of typical drugs, provided, however, that these drugs are to be taught as types and not as exclusives.

DR. M. CLAYTON THRUSH, Philadelphia: The important part that the state medical boards of this country play in the teaching of pharmacology and therapeutics in our medical schools has not been sufficiently emphasized. The young man who is about to enter a medical school, of course, wishes to enter the best. He selects one of the colleges which has most of its graduates pass the state board and the way we decide their respective rank is by the report we find once a year in THE JOURNAL of the American Medical Association. How do we classify medical colleges in their reputation? They are beautifully classified according to the number of men who pass the state boards successfully. The school with the fewest failures is considered the best school. Considering state boards as the best judges of the reliability of medical schools, we must consider what a powerful factor the state board is. A few years ago in Pennsylvania the question was asked: "How much tincture of pilocarpus is equivalent to 1/20 of a grain of pilocarpin hydrochlorid?" The students could not answer the question and brought it to me. I told them that the question could not be answered because the amount of pilocarpin varies in different specimens of the drug, and again we have no standard-strength tincture official. How could you make the comparison to determine how much tincture? That is the kind of questions our state boards ask. The whole solution of this problem is to have men on our state boards who will ask sensible questions. Then our teachers of therapeutics, as Dr. Hare has said, will not have to teach one dose for the state board examination and another dose for actual practice.

DR. L. F. KEBLER, Washington, D. C.: Professor Puckner spoke of restricting the number of drugs and stated that widely used drugs are usually of high quality and of greater purity. My experience bears out that view in so far as chemicals are concerned, but such is not the case with crude plant drugs. Ergot, for example, imported into the United States during the past year, has been very bad, yet large quantities are used. The same thing holds true in regard to buchu leaves, so far as foreign material is concerned. Another point that ought to be brought out is this: even though the chemicals are of good quality the preparations containing them frequently vary materially. A worse feature is that they are often not true to claims that appear on the label. For example, you will find a tablet labeled as containing 1/60 of a grain of strychnin; investigation often shows that it does not contain that quantity or contains much more. The same is true of nitroglycerin tablets. Professor Hynson spoke of 17,000 drugs they have kept watch of. We need to keep watch of a much larger number, probably 25,000 proprietary remedies and probably the same number of ethical mixtures. A pill or tablet made by one manufacturer may be analyzed by a certain method, but when the analyst applies that same method to a tablet of another make and tries to analyze it he is likely to experience trouble. So it is necessary, in order to arrive at the active constituents in some of these tablets, to work out a method for almost every manufacturer's tablet. One argument against the restriction of the number of these drugs is that the Pharmacopeia is the law and the standard. With the present construction of the law I wish there was no Pharmacopeia, because if the Pharmacopeia is made a standard

we are virtually restricted to that standard. We have no discretion in going further. A case we had in New York the other day illustrates this. An importer was allowed to bring in so-called senna siftings, but after getting it in the bale was renamed and shipped into interstate commerce as "broken senna." The court held, under the definition of the law, that the commodity was not considered adulterated because the word "broken" was introduced. If we had not been restricted to the Pharmacopeia we would have been absolutely free to fix a standard, but with the Pharmacopeia as it stands we are apparently helpless. Any standard of the Pharmacopeia can be negatived as the situation now stands by introducing some qualifying word such as "broken." Another example is debased male fern, shipped into interstate commerce as "male fern, natural." It is claimed not to be the male fern of the Pharmacopeia, but something else. If the Pharmacopeia did not exist, if it was not under the law, we would not have these difficulties.

DR. OLIVER T. OSBORNE, New Haven, Conn.: You will all realize why Dr. Cohen and I cannot get together on the Pharmacopeia. In other sections the need for accepting the best present standards is recognized, but here advice as to what drugs have positive therapeutic value is called an attempt to take away the personal liberty of the individual. I say we should go in for therapeutics right up to date. Now, we can talk until we are tired of the standardization of the Pharmacopeia and its object. The Pharmacopeia is an advertisement and a recommendation of the drugs it names, and says to the individual, this is the best we can offer you, go and practice it. Therefore, I say that there is an object in limiting our discussions to drugs that are of value and insisting that they are the ones we should use, and the Pharmacopeia should contain only such useful drugs. On the other hand, if we are going to standardize different colored preparations for psychic effects, for the sake of the effect on patients, what will the end be? If bricks and sand are essentials to putting together a house with a spade, and some builders prefer a modified spade called a trowel, is it necessary to standardize the trowels? Let him get it where he can get that particular trowel; not standardize any one trowel and say that is the trowel. Just before I left New Haven, in an examination of our junior class on advanced pharmacology and beginning therapeutics, I asked the question: "Name the ten drugs that have the most value in your opinion and then state why. Also, name the best preparations and doses of these individual drugs." Twenty drugs would cover all these men decided on. Now that is what we are looking for in the advance of the teaching of materia medica, and the medical examining boards have got to come to it. It is only a question of a few years more and schools and examining boards will recognize only active drugs, and why should not we all now aim to have the Pharmacopeia an up-to-date proposition? One word more in regard to substances presented to the Council on Pharmacy and Chemistry. Many times the preparation offered does the work claimed for it. But we find that the active substance is in a mixture. We cannot pick out one of these therapeutic combinations and say "this is what does the work," when any other combination of the active drug would do as well.

The Mental Factor in Functional Diseases.—An intimate relation exists between the functions of the central nervous system on the one hand and the sensory, motor and visceral functions on the other. This vital relation, though unobtrusive in the normal individual, stands out clear and distinct in the whole domain of functional diseases. Clinical and laboratory studies have brought to light the important fact that all those cases that go under the description of nervous disturbances of a functional character, such as hysteria, hystero-epilepsy, the so-called larval epilepsy, psychic epilepsy, neurasthenia, psychasthenia, and all the forms of the neuroses and phobias in regard to external and internal stimulations, are all to be ultimately referred to mental disturbances, whether conscious or subconscious.—Sidis in *Arch. Diagnosis.*

THE TREATMENT OF LEUKEMIA AND PSEUDOLEUKEMIA WITH X-RAYS *

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AND
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PHILADELPHIA

Little has been added to our knowledge of the etiology or pathology of leukemia and Hodgkin's disease during the last few years. Some details regarding the diagnosis have been established and in the case of Hodgkin's disease the clinical differentiation from certain conditions presenting superficial resemblances has been made possible. So far as the ultimate causes and nature of these diseases are concerned, we remain in the same ignorance as formerly. The tendency among writers has, it is true, been more and more commonly manifested in the direction of regarding both as close kindred of the new growths, a view which we have held for a long time and on which in a large measure our methods of using the *x*-rays in the treatment are based. In our former discussion of the subject[1] we called attention to the fact that so far as leukemia is concerned all recent investigations tended to prove that the bone-marrow is the primary seat of the morbid processes, no matter whether the disease is of the so-called myelogenous or of the lymphatic variety. The further contributions of the years intervening since our publications still tend to maintain this proposition. In the case of Hodgkin's disease the evidence is otherwise. Here the initial lesions are of a different sort and localization, the lymphatic glands being the place of origin and remaining the place of chief involvement.

One other feature in the pathology of these diseases that requires brief mention here is the influence of the disease of the bone-marrow on the formation of red blood-corpuscles. The clinical study of the blood in cases of leukemia progressing unfavorably always shows advancing anemia, which is evident from the decreasing number of red corpuscles, their morphologic variation from the normal and in the somewhat less trustworthy diminution of hemoglobin as determined by the ordinary methods. So far as the hemoglobin is concerned, one must remember that increased leukocyte-counts affect the estimations very decidedly. This progressive anemia of advancing leukemia is manifestly hypoplastic. All the evidence of the studies of the blood points to increasing imperfection in blood-making and there are few of the signs of hemolysis. As far as prognosis is concerned we must look to the study of the red cells and of the hemoglobin for the best guides to a determination of the probable course of the case. Enormous numbers of leukocytes may be present for considerable periods without immediate serious significance, but a rapidly falling erythrocytic count is always ominous. On the other hand, reduction of the leukocyte-count alone does not constitute sufficient evidence of improvement. This was plainly shown in some of the early *x*-ray treatments when applications to the spleen sometimes caused rapid reductions of the leukocyte-count without corresponding improvement in the patient — rather, indeed, with a reverse effect.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

1. Stengel, A., and Pancoast, H. K.: Treatment of Leukemia by the *X*-Ray, THE JOURNAL A. M. A., April 25, 1908, p. 1317.

A matter of considerable clinical interest is the tendency to spontaneous recessions occasionally seen in leukemia. It is more commonly recognized that such recessions frequently occur in pernicious anemia and that their occurrence must be reckoned with in estimating the probable effects of treatment. Similar recessions occur in leukemia and in Hodgkin's disease. Three distinct instances in leukemia have come under our observation. The most striking was one in which a woman who had presented marked and undoubted evidences of myelogenous leukemia lost all symptoms of this condition after removal to a near-by mountain resort. Practically no medical treatment was used — none which could ordinarily have caused such a result. In two other cases, one of which is still under our observation, there was speedy disappearance of all signs of the disease after brief, and, according to ordinary standards, inadequate *x*-ray treatment. In each case the examination of the blood during the remission by expert hematologists at first showed no evidence of the preexisting trouble and only after the history was furnished did they discover on prolonged search a few abnormal leukocytes of possible myelocytic type. In one of these cases a relapse, a second recession and a third relapse occurred under our observation. In the other there has been no relapse after nearly a year. Previous experience of our own and a study of the literature had convinced us that such remissions are probably not uncommon in the early stages of the disease, but we had had no opportunity of actually observing them.

LEUKEMIA

We have had opportunities to observe the effect of *x*-ray treatment on over forty cases of leukemia. The first two of these were treated throughout by the older method of directing the applications mainly or entirely to the enlarged spleen, before the adoption of our present technic. The results were the usual unsatisfactory and disappointing ones with which we are all familiar. In the other cases, the present technic, that of directing the radiation primarily to the bones, has been employed throughout, with a few exceptions. While most of the patients have been under our direct care during the entire period of treatment, in a few instances we have either started or have simply outlined the treatment, and it has been continued or carried out altogether by others, and we have kept in touch with the patients subsequently as far as this has been possible.

While we are not prepared to present any exact statistical evidence to show the relative merits of the two methods, our experience with both has been so convincing as to leave no doubt as to the superiority of the results derived by the method now employed. It is gratifying to know that this method is shared by many others who have adopted this method in preference to the older one. In a few instances we have been able to compare the results of both in connection with the same cases in which splenic radiation was instituted with either little or no benefit or the patient made worse; but following the change to bone-radiation, the decided improvement that soon became manifest was most gratifying.

So far we have been unable to prove that leukemia can be permanently cured by radiation, but we do know that the *x*-ray will do more toward prolonging life during a period of comparative comfort than any other therapeutic agent yet employed. The important advantages to be derived from directing the treatment primarily to the bones may be summarized as follows:

1. In general, the expectation of life is greater.

2. Patients as a rule regain health and strength more rapidly, owing in part, no doubt, to the avoidance of early toxemia; and the average patient is soon able to resume his or her occupation, even though the leukocyte-count remains high. This state of comparative health and comfort may be maintained for a variable period, but it usually continues up to a short time before death, when this ultimate termination does come. One patient who has been under our observation from the beginning, though not treated by us, has been in comparatively good general health and has been able to attend to his business for four years. This has been accomplished by keeping a close watch over the differential count, and whenever there has been a decided change in the percentages, one or more series of applications have been made by his physician over the entire body. Another patient who stopped treatment and returned home some time before we would have been willing to discontinue remained in relatively good health without any treatment for three and one-half years, when she was said to have died of pneumonia.

3. This method is certainly attended by fewer dangers from toxemia and *x*-ray dermatitis.

In order to derive the greatest possible benefit from the treatment, it must be administered carefully and intelligently. The more careful we are in carrying out the technic thoroughly and systematically, and in adapting it to suit the special features of each individual case, the greater will be the benefit derived, in the long run, and the longer will the patient live.

The general technic that has been previously described in detail is still followed. Experience has proved that it has certain features which require special emphasis:

1. The applications should be made systematically to the bones of the entire body, with the exception of the head, the body being mapped out into definite areas for the purpose.

2. Exactness in dosage is always most important. It should be so regulated as to produce the necessary effect without inducing toxemia, if possible.

3. The frequency of the applications is equally as important. They should be made daily when possible, and prolonged periods of rest should not be permitted. Life has been shortened months or even years in many instances through disobedience of this injunction, or failure to insist on it.

4. Direct exposure of the spleen and other secondary enlargements should be carefully avoided during the earlier part of the treatment; this applies especially to the very large spleens of the myelogenous form of the disease. The first important reason for this is the avoidance of the undesirable toxemia that is likely to follow, especially in advanced toxic cases; and the second is the fact that the more rapid decrease in the leukocytosis that is likely to follow is apt to be misleading because it is not due to the effect of the radiation on the primary seat of the disease entirely. In many instances this will lead to a discontinuance of the treatment long before the greatest possible inhibitory effect on cell-proliferation has been induced. The spleen and other enlargements should receive a share of the applications by all means, but always at a later and safer period, when the leukocytosis has diminished considerably and the general condition improved to such an extent that the additional waste products can be taken care of adequately and eliminated without any danger from toxemia. The spleen should not be treated at the expense of the bones, but should be included as an additional region to receive its share of the applications in its turn. In the case of

enormous spleens it is advisable to begin their radiation at the earliest period consistent with safety, because their reduction requires a long time. Moreover, a large spleen is a source of much discomfort because of its size, weight and effect on other organs, and its presence is a source of occasional dangerous complications, such as perisplenitis or hemorrhage resulting either spontaneously or as a result of traumatism, as from a fall. We recently had the experience of a sudden death in a patient who had been progressing most favorably until she fell and struck heavily over the splenic region. The splenic tumor may remain as the last vestige of the disease, and require radiation for some time after the disappearance of all other manifestations.

5. The duration of the treatment has an important bearing upon the prolongation of life. Applications should not be discontinued or lessened in frequency until normal conditions prevail, if this be possible. By "normal conditions" is meant the disappearance of every manifestation of the disease, including abnormalities in the differential count.

6. The leukocyte count may be an important clinical factor in showing the patient's condition, and is perhaps the most direct single index we have as to the effect of the treatment on the disease, but it is by no means so dependable in the latter application as it is generally regarded. In fact, it should not be relied on to any extent as a direct index, except at practically one stage of the treatment. If we are able to reach the point where the leukocyte-count has subsided to normal or nearly normal figures, the differential count becomes more and more important as the guide for continuing or stopping the applications.

In those cases which exhibit an unusual susceptibility to radiation or arsenic, the rapid disappearance of the abnormal blood-picture suggests or requires a cessation of treatment long before any definite or lasting effect can be exerted, and such cases soon relapse, and do not do well ultimately, as a rule. The usual slow reduction in the leukocytosis that is characteristic of the bone-treatment is to be regarded as an advantage for the reason that it prevents a too early cessation of the applications, and experience has proved that only very prolonged treatment has any decided influence over the disease. If the count remains stationary for some time at a comparatively high figure after it has dropped to a certain extent, as is frequently the case, moderate doses of arsenic will usually lend the necessary assistance to the *x*-ray in lowering the count further. Unless indicated in this way, or by a decided anemia that does not improve, the use of arsenic during radiation does no good, and only causes confusion.

Blood-examinations should be made frequently throughout the treatment, and especially leukocyte-counts. As a rule the leukocytosis is apt to increase to a certain extent for a while after beginning radiation of the bones, but this should never be regarded seriously unless accompanied by increased toxemia, or unless the general condition becomes worse. A normal leukocyte-count is never, in itself, an indication to stop, but treatment should be continued as long as myelocytes are present, or the differential count remains distinctly abnormal. If we are so fortunate as to bring about a restoration to normal percentages, treatment may be discontinued; but a differential count should be made subsequently at least once a month, and, on the return of distinctly abnormal percentages, radiation should be resumed immediately, without waiting for the appearance of any other manifestations of a relapse. This is one of the secrets of prolonging life in the most favorable cases. Arsenic should be avoided particularly at such times, as it tends to delay the appearance of the first signs of a relapse and the needed radiation.

7. Arsenic is frequently a valuable adjunct to radiation, as already explained, but it is too often misused. If radiation is to be regarded as the essential therapeutic agent, and there are no special indications for giving arsenic, it should be used with careful reservation, as it is likely to interfere seriously with the proper and adequate administration of the *x*-ray treatment. It should never be given in large doses during radiation. If for any reason the patient is obliged to discontinue the *x*-ray for any considerable period of time, arsenic should, of course, take its place.

8. Particular attention should be paid to the care of the skin from the very beginning, as the ultimate result or the duration of life, at least, may be largely dependent on the tolerance of the integument. A severe *x*-ray dermatitis always demands a cessation of treatment over a portion, or all, of the body, and this may be of sufficient duration to shorten the life of the patient a year or more.

Adequate *x*-ray filters should always be employed, and the applications made through the clothing as an additional precaution. The quality of the output of the *x*-ray tube should also be carefully watched. A dermatitis is far more likely to appear during the summer months. Whenever the skin begins to show a reaction, alcohol bathing should be advised, and talcum or stearate of zinc dusting-powder should be freely used, especially where skin surfaces are in contact or the clothing produces friction. It is well to give additional protection to the hands, which are not covered by clothing, and to protect the hair of the head and the external genitalia of males by lead screens.

Long-continued radiation will ultimately cause an atrophy of the glands of the skin. It has been contended that the resulting loss of the function of sweat-secretion is harmful. If undoubted proof of this should exist, it might be possible to protect the sweat-glands in some portions of the body where they are most numerous or best developed, as those of the axillæ, for example. We have never found any occasion for doing this, however.

9. Radiation is contra-indicated in practically all cases of acute leukemia, as it will only hasten death. The same may be said of many chronic cases during acute stages with associated severe toxemias, although considerable benefit may be derived from the treatment of some of these cases. When we do undertake to treat them, the greatest care is required in handling them. The dosage should be much reduced at the start, and the applications should be limited to the extremities until there are some definite signs of improvement. If the condition appears to become distinctly aggravated by the treatment, this should be discontinued; but if there seems to be any improvement, or even if the case appears to be made a trifle worse, radiation should be continued, and the dosage gradually increased with care, but kept within safe limits. To accomplish any good, this early toxic period must be passed over as soon as possible, and without intermissions unless absolutely necessary. In these grave cases it is a question of life or death, and many such patients have been allowed to die too soon for fear of doing harm before any harm has been done. We have carried several patients safely over such periods, even when others have hesitated or declined to treat them, and some of these patients are now alive and attending to their daily occupations.

10. Of all the patients who have responded in any way favorably to the treatment, it has been our experience that those of lymphatic type give somewhat better ultimate results than those of myelogenous type.

PSEUDOLEUKEMIA

In Hodgkin's disease the radiation must, of course, be directed to the localized enlargements. The more experience one has with the treatment of this disease the more he is inclined to regard it, from the therapeutic standpoint at least, as closely analogous to lymphosarcoma. The majority of cases certainly resemble the latter closely in the manner in which they react.

From the *x*-ray therapeutic point of view we might recognize three distinct groups of cases. To one group belongs a small percentage in which the enlargements are localized to one region, respond rather promptly to treatment, and either do not recur, or if they do, usually because of insufficient radiation, the recurrence is limited to the same area, without metastasis, and readily responds again. One case of this kind was treated four years ago, receiving less than twenty applications, and there has been no sign of a recurrence since.

The second group includes the majority of cases. In them the enlargements may be more or less localized, or general; they respond to treatment slowly, and not only recur invariably, but also give rise to metastases in nearby or even distant structures. These patients ultimately die as a rule, but we can do much toward prolonging life, sometimes for years, by keeping up a constant fight and attacking the metastases as they appear. We have now under treatment two patients with late spinal involvement which in one had appeared after all other demonstrable enlargements had subsided some time ago. Another patient with localized cervical enlargements died following rapid hepatic metastasis, which was not recognized until the autopsy.

In such cases with general enlargements, we can practically never expect a complete disappearance of those within the chest, abdomen or pelvis. With such patients we must pursue a more or less palliative course, and keep up the treatment indefinitely. It has been our custom to go as far as the skin will permit with vigorous treatment, or to keep it up until no further enlargements can be demonstrated, though they no doubt still exist, and then to continue the applications at less frequent intervals indefinitely. One each week may be all that is required to keep the patient alive, and practically well, for years. One of our patients has been kept comparatively well for five years in this way, although the enlargements become manifest in some one area or another if the applications are discontinued for any length of time.

To the third group belong a small percentage of cases which do not seem to respond to radiation, and some of which may be rendered so toxic as to necessitate its discontinuance.

A large percentage of cases of Hodgkin's disease will exhibit toxic phenomena a few hours after each of the earlier applications, and this is just as apt to occur in a case with a small localized group of glands of moderate size as in one with extremely large glands or wide-spread enlargements. The patient may complain only of a headache, but may have a slight chill and moderate rise of temperature. These phenomena follow only the first few treatments as a rule, but they are manifest so frequently that we have made it a rule to begin the treatment of all cases with diminished dosage, increasing it to a maximum gradually.

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ABSTRACT OF DISCUSSION

DR. JAMES TYSON, Philadelphia: I can add one instance to the report of Dr. Stengel and Dr. Pancoast, that of a young farmer who appeared to respond promptly to the application of the *x*-ray to the bone-shafts. After a time, however, he relapsed and a return to the use of the *x*-ray was not followed by a prompt response until the administration of arsenic was associated, when he again improved decidedly, and at last reports was in excellent shape.

DR. WALTER L. BIERRING, Des Moines, Iowa: In view of the etiologic significance of bone-marrow changes to leukemia, I am sure we all recognize the logical application of the *x*-rays. While it cannot be considered a curative measure, it evidently has a favorable effect on the comfort of the individual and in prolonging life. In connection with the treatment of leukemia, an interesting observation was made during the past year in connection with a case of chronic myelocytic leukemia, which had been observed during the past three and one-half years. In January, 1912, immediately after a period when the leukocytosis was specially marked, averaging 350,000 leukocytes per cubic millimeter, and the other symptoms of leukemia being specially prominent, the patient developed a large carbuncle in the back. This led to a general septicemia, the predominating organism being the *Staphylococcus pyogenes aureus*. The carbuncle was excised in the surgical service of Dr. Fay, and the patient did not fully recover from this infection before the end of six weeks. During this period the blood-picture underwent a complete change, in that the leukocytes were reduced to 18,000, and the myelocytes from 45 to 3 per cent., while the polymorphonuclear leukocytes predominated to the extent of from 90 to 95 per cent. in the differential count.

The patient passed from observation immediately after his recovery from the infection and did not return to the hospital until two months later, when the leukemic blood-picture was again prominent. The leukemic blood-picture was replaced by that peculiar to a pyogenic infection. In view of the previous experience the patient was treated with staphlycoccus vaccine prepared from a laboratory culture, and during the following two months a distinct change was noted in the blood-picture in that the leukocytes were reduced and the other leukemic features became less marked, but the effect was not nearly so striking as that produced by the infection in January. This antagonism between a pyogenic infection and leukemic processes has been observed before, and is rather suggestive of a close relationship between leukemic and sarcomatous processes, because the antagonism between pyogenic infection and sarcoma has been a frequent observation particularly in the older literature. The patient referred to has also undergone distinct remissions of improvement under *x*-ray treatment, but the change was not so marked as that produced by the pyogenic infection.

DR. ELLIOTT P. JOSLIN, Boston: I should like to ask if Dr. Stengel could give any idea regarding the duration of life of those so treated, and also the duration of life in a series of cases of leukemia untreated with the *x*-ray.

DR. ADONIRAM JUDSON QUIMBY, New York: I have treated at least twenty of these cases, more than half clinical patients at the Post-Graduate Hospital. I have not used arsenic in treating any of them. It has not been possible to follow the clinical cases so closely as would be desirable; I can recall only one or two which have terminated fatally and these patients were practically moribund when first seen. In all the otherss I have noted improvement, although some are still in bad condition. On the other hand, the cases I have in private practice I have been able to follow and have been much gratified by the results obtained, especially after treatment directed to the long bones, which were the only parts treated in several cases. The blood-count has shown considerable variation, but has been quite generally satisfactory. Several patients who have been under observation about two years have now practically a normal picture, and are continuing well.

DR. ALFRED STENGEL, Philadelphia: In answer to Dr. Joslin's question, I would say that the introduction of *x*-ray

treatment in the management of leukemia has been too recent to justify a statement as to whether the final results will be better than those of medical treatment. It is, of course, well known that patients with leukemia frequently survive for several years, sometimes without any treatment whatever. It will require, therefore, several years longer before one can definitely say how lasting a result may be achieved by *x*-rays. Perhaps I can give some answer, though less definite than Dr. Joslin would like. During twelve or fifteen years prior to the use of this treatment, I saw many cases of blood-disease including leukemia, and in all that time I can recall but one case in which under the use of arsenic the blood-picture returned to something approximating the normal. On the other hand, in the few years during which we have been employing the *x*-rays, several such cases have occurred and in a number of others I can state that the general condition of health was materially improved as I had never seen any patients improved by arsenic or other remedies. Dr. Pancoast has stated, and I entirely agree with him, that we have no ground for believing that the use of *x*-rays will cure leukemia, but on the other hand I have many reasons for thinking that it will delay the fatal termination of the disease.

The older literature contains quite a number of references to cases of leukemia apparently terminating favorably on the supervention of some infection. Among others, I recall certain milder infectious diseases of childhood and others in which more serious diseases like tuberculosis occurred. On account of this antagonism I treated several cases of leukemia by vaccination with cow-pox virus, hoping that this might prove effective. The number of cases so treated was small but none of them gave the least sign of encouragement. In several cases in our present series accidental infections occurred and in one of them a huge abscess developed under the muscles of the thigh following a hemorrhage into those tissues. The patient subsequently recovered but the infectious lesion had no effect whatever on the progress of the leukemia.

One feature in certain of the cases that have been under our treatment is that though the blood-picture altered little, if at all, the patient's strength and his capacity for work returned and aside from the blood examination one would have been compelled to regard the result as most satisfactory. Another point regarding this treatment that needs consideration is that the use of *x*-rays especially over the spleen acts in a hemolytic way and the red cell count is reduced. When this reaches a certain point, the treatment should be moderated or discontinued and an effort should be made toward restoring the quality of the blood.

ROENTGEN TREATMENT OF NON-MALIGNANT LESIONS *

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Realizing that Roentgen treatment in non-malignant lesions is too broad a subject to treat in detail in such a paper as this, I shall invite consideration of only a few of the more important phases of the subject. It may be taken for granted, at the outset, that Roentgen therapy has vindicated itself as an essential adjunct in the treatment of superficial non-malignant lesions, the part of the symposium I have been requested to take up, but there is still considerable difference of opinion as to the exact range of usefulness. Some dermatologists undervalue this method because they have seen failures, as well as harm done by injudicious treatment, and also because they are unable to apply this method properly or even to select the cases best suited to this treatment. On the other hand, many roentgenologists who have observed brilliant results are overenthusiastic and advise Roentgen treatment in many cases which could be treated effectively by more simple methods, and cases in which nothing but failures could be expected. Therefore these enthusiastics treat a greater percentage of cases than is justifiable.

There is need of a definite classification not only by exact diagnosis, but also by the stage of pathologic changes. It can then readily be understood that the controversy as to Roentgen treatment is due to a deficiency in technic among many dermatologists, and a deficiency in diagnostic and pathologic knowledge among many roentgenologists. Incorrect treatment is as potent for harm as the correct is for good. Justice demands that the Roentgen rays be applied with care and skill, not only in cases in which it is the best method of treatment but also in cases in which it is an essential adjunct to other methods. The successful therapeutist must be master of his technic, whether it be roentgenology or medication. It is well known that the reaction varies from a simple transient erythema to a deep-seated inflammation with sloughing, thus producing all the stages of a burn.

I shall omit the different degrees of Roentgen dermatitis, as they are well known to all at the present time. That the same dosage of *x*-ray effects tissues differently is also generally understood. It has been explained often how frequently glands undergo a fibrous degeneration without injuring the surrounding tissues, and it would be only a waste of time to review this part of the subject.

It has been repeatedly demonstrated that pathologic cells are less resistant to the rays than the normal; thus, diseased cells may be destroyed while at the same time the surrounding healthy tissue may be little affected or may even be stimulated. The therapeutic indications for the Roentgen rays are the removal of hair; the diminution of the functional activity or atrophy of sebaceous glands; the destruction of microorganisms in living tissue; the alteration of metabolism, either general or local; the destruction of pathologic formations, and the analgesic action on pruritus and in malignant tumors. These indications are based on pathologic and clinical findings, and in a general way should be of some assistance to those who have had even no experience in determining diseases in which the rays are applicable. In some instances more than one action of the rays may be indicated and the application of the rays affords rather a wide field of usefulness.

CLASSIFICATION OF CUTANEOUS LESIONS

It would simplify Roentgen therapy if the non-malignant superficial lesions could be classified into: (1) cases in which the rays are the best single method of treatment; (2) cases in which the *x*-ray should be employed in conjunction with other methods; (3) cases in which the rays will cure the lesion, though not so well as other remedies; (4) cases in which the Roentgen rays are contra-indicated. The pathology of the lesions, however, are so diversified in the same disease, that even such classification would necessarily be inaccurate.

Possibly in no field of medicine has there been so much difficulty in determining a classification as in the cutaneous lesions. The problem has been a favorite study of the dermatologist for more than a century, and at present there are over 300 classified diseases of more or less uncertain pathology. The principles in Roentgen treatment differ in no respect from those which govern

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pharmaceutic remedies. Recognition of the correct pathologic stage of the disease is just as essential as the diagnosis itself, in determining and influencing the treatment. Cases in which Roentgen therapy is indicated do not run an acute course, as a rule, and are not self-limited and the patients will not recover in spite of bungling treatment. It is just as inexcusable, as well as inadvisable, to treat a premature alopecia with the *x*-ray, as it is advisable to treat ringworm of the scalp by this method. In premature alopecia there is an early degenerative change and therefore only stimulating treatment is advisable, while in ringworm of the scalp there is a microorganism, and the object is to remove the hair without producing any degeneration. Errors in such cases are fortunately becoming less and, with the proper therapeutic understanding, should entirely disappear. In most cases in which this method is advocated only local measures are required. The proper constitutional management in many diseases is, however, important. It is necessary to build up and maintain the strength of the patient, as this has a potent influence in the permanency of cure. To attain more than the average success in this line of therapy, the physician must have a good foundation of general medicine, as well as a special roentgenologic knowledge.

DISEASES THAT ARE BENEFITED BY RÖENTGEN RAYS

Much benefit has been derived from *x*-ray therapy in a number of the inflammatory skin diseases, such as eczema, psoriasis, lichen planus, lupus erythematosus, etc., in all of which the skin is thickened and indurated as the result of a chronic inflammatory process. The proper amount of radiation given at the proper intervals will often produce sufficient stimulation of the tissue to cause absorption of the inflammatory exudate. Since the etiology and pathology of the various inflammatory diseases are different, the amount of treatment and even the length of time vary the same as other therapeutic agents. It is in this class of cases, as a rule, that the roentgenologist depends entirely on the rays to effect a cure, whereas it may be advisable to use other adjuvants.

I was called in consultation recently with a physician who had been applying the rays for a case of eczema in an elderly patient; the tissues were already of low vitality, and he had been giving the same amount of radiation that he had given in a case of epithelioma which he had treated successfully. When treatment is applied over a large area of tissue which is of low vitality, for the purpose of stimulating the absorption of the inflammatory exudate, it must be mild in comparison with that necessary to produce destruction of tissue as in epithelioma. Otherwise harm instead of benefit may be the result. In many such cases the *x*-ray is inadvisable, inasmuch as stimulating medication will often readily effect a cure. We should reserve this form of treatment for the recurrent and the very chronic cases. One is occasionally greatly surprised at the results which can be accomplished in from five to ten treatments in cases of chronic eczema which have resisted all other treatment and have gone the rounds of the various physicians. I have found the application of the *x*-ray beneficial in many cases of chronic eczema of the hands. Many observers have noted the fact that after a few applications of the Roentgen rays the discharge and itching ceased and the desquamation was arrested.

Schamberg mentions the value of the *x*-ray in recurrent vesicular eczema of the hands and feet. He states that in no other form of the disease is radiotherapy so uniformly successful and that it secures a greater permanence of cure than any other method. In scaly eczemas of the palms and soles the results are less certain.

The *x*-ray is a valuable accessory to the treatment of psoriasis. Under moderate exposures at proper intervals, according to the amount of *x*-radiation, psoriasis usually completely disappears. The treatment should be given cautiously in order to avoid the production of a dermatitis, and extreme caution should be exercised if it is given over large surfaces. The treatment is far more agreeable to the patient than any of the other forms of treatment, and is often successful in rebellious and obstinate cases that had practically resisted all other methods of treatment. It is generally conceded that there are fewer recurrences and that the intervals between attacks are prolonged. Besides, the recurrence is usually of a milder type, which will nearly always yield to medication after the patches have once been made to disappear by the *x*-ray.

Authorities have agreed that either the Roentgen rays or Finsen light constitutes the most efficient treatment we have for lupus vulgaris, but the routine application of the *x*-ray in the treatment of lupus erythematosus has been disappointing. A study of the pathology will show why the rays have only a limited use in lupus erythematosus. That the name suggests essential relationship to lupus vulgaris is unfortunate. Except in distribution and in its broadest features, it does not, as a rule, suggest lupus vulgaris, and it is not a form of tuberculosis of the skin. Lupus erythematosus is characterized by well-defined reddish patches, covered with grayish scales, adhering to the surface and tending to atrophy; while lupus vulgaris is a tuberculous, cellular new growth, consisting of papules, nodules and flat infiltrations, usually terminating in ulceration and scarring. In lupus erythematosus there are two distinct types of cases which require entirely different treatment. The superficial type, with red patches and dilated blood-vessels, should be treated with the milder remedies, including sedatives; whereas the interstitial, with infiltrated patches and horny crusts, can be successfully treated only by stimulating and even more heroic measures. This is one of the reasons why it has been frequently stated that the *x*-ray in some cases aggravates the condition and causes spreading of the disease. The cases most benefited by the *x*-ray are those in which the chronic infiltrated patches, with hypertrophy of the sebaceous glands, predominate. Roentgen therapy should be employed with special care in lupus erythematosus. Many authorities are impressed with the results of carbon dioxid in lupus erythematosus, and believe that it is superior to any other method in which the more radical procedures are employed.

There is universal testimony that excellent results from the Roentgen method of lupus vulgaris are just as marked as the Finsen method. The scars are soft, white and flexible, not showing the usual keloid-like character of the scars following removal by other methods. There are also fewer recurrences. On account of the *x*-ray being more easily applied, at present it seems to have the preference over Finsen therapy.

Roentgen therapy is not a satisfactory method for the permanent removal of hair. It is necessary to produce a permanent atrophy of the hair follicles and in so doing there is danger of producing atrophy of the surrounding structures. Results may be secured in a certain percentage of cases, but in my opinion the method should not be undertaken except in extreme conditions and with the full understanding that even if

the exposures are kept within the bounds of safety, improvement is altogether uncertain.

The *x*-ray as an epilating agent, as a rule, should be reserved for favus and ringworm of the scalp, in which we wish both to remove the hair and to destroy the microorganism. The excellent results of Saboraud and others are well known and need no further explanation.

In private practice one only occasionally sees favus and tinea tonsurans, and in this country the majority of the work done has been in institutions. Excellent results in both sycosis vulgaris and tinea sycosis have been obtained. The amount of *x*-radiation here, as in other lesions mentioned, depends on the etiology and pathology of the disease in question. In tinea sycosis it is necessary to epilate the hairs completely in order to remove the organism in the tissue, while in sycosis vulgaris the patients usually recover long before the hairs fall out, and often many times before the slightest erythema is observed. One of the reasons for mentioning the difference in treatment between sycosis vulgaris and tinea sycosis is that one of the recent text-books of roentgenology, which has the ground well covered in roentgenography, covers the subject of Roentgen therapy for sycosis in two lines and one-half. I suppose tinea sycosis is meant, but to any one just taking up Roentgen therapy it certainly would not be clear which form was under discussion. The physician who approaches the study of Roentgen therapy finds the literature full of just such puzzling problems.

In acne vulgaris, I consider that the *x*-ray is the most important single therapeutic measure we possess, but other measures should usually be combined with this form of treatment. The *x*-ray is applicable in all stubborn forms of acne vulgaris and the results are particularly marked in the most severe pustular cases. In acne rosacea we have a different pathologic condition from that of acne vulgaris. Radiation should be carried only to the point of decreasing the activity of the sebaceous glands, which causes absorption of a large amount of the hypertrophic growth of connective tissue. The destruction of the small vessels should be accomplished by other methods, such as electrolysis. In lesions of this type it is never advisable to push radiation to the point of destroying all the small vessels.

It is a fact that the common mistake in the treatment of acne is made by overdosage for a short period or underdosage too long continued. Either produces complete atrophy of the sebaceous glands, while partial or temporary atrophy is all that is necessary to effect a cure. When permanent atrophy is produced acne will not recur; but such condition of the skin is worse than the disease itself.

Lately I have observed amazing results from a few applications of the rays in hyperhidrosis, and results can be accomplished in a few treatments without the production of any noticeable reaction in the skin.

The destruction of new growths by the rays has brought about considerable controversy which is still going on. Because the rays will destroy tissue of low resistance without destruction to the healthy stroma, some have gone to the extreme of applying this method injudiciously, whether it is for the removal of a simple benign wart or mole or for a large malignant tumor. This has brought much discredit to Roentgen therapy. The fact that a physician has an *x*-ray machine or that a wart or mole can be removed by a number of treatments does not justify the selection of this agent. This is what I have repeatedly seen done by many, when a single application of electrolysis, high-frequency spark or excision under a local anesthetic would have accomplished the same result.

The *x*-ray is indicated for multiple glandular tumors of any size, unless produced by an acute inflammatory process. It is to be particularly noted that the end-results in tuberculous adenitis are better than in any other form of the glandular growths. Glandular enlargements constitute a broad subject and will not be further discussed.

Before the employment of the Roentgen rays for the treatment of keloid, results were very unsatisfactory. Many have been able to convert large keloids into flat, flexible white scars by the application of the *x*-ray. Large hypertrophic scars can be treated with the same result. I have secured several good results in cases in which the keloid was large and somewhat resistant to the *x*-ray by having the growth excised and then giving a few additional radiations.

In conclusion, the distinctions drawn in this paper in which the *x*-ray is indicated and others in which it is contra-indicated, and still others in which the ideal treatment combines the *x*-ray and medication, it follows logically that the roentgenologist must be an expert dermatologist and vice versa. To my mind many unsuccessful results can be expected by roentgenologists applying the rays with little or no dermatologic knowledge or, on the other hand, by dermatologists using an agent about which they know little or absolutely nothing. It is my firm belief that there will be a specialty known under the combined name or title of roentgodermatology or dermatoroentgenology.

ABSTRACT OF DISCUSSION

DR. HENRY K. PANCOAST, Philadelphia: Dr. Boggs' assertion that *x*-ray men should be dermatologists must be more valid if he so modified it as to imply that a roentgenologist should not treat skin diseases unless he is a dermatologist as well. Radiation is the only generally successful method of treating keloid. When used alone, the treatment must be long continued, but experience has shown that excision, when possible, and subsequent postoperative radiation, are just as efficient, and in much shorter time. The results in tuberculous adenitis make this one of the most satisfactory conditions to treat by radiation. A decided skin reaction is essential before sufficient radiation has been applied to exert the necessary degree of stimulation in healthy tissue or cells, and at the same time a destructive effect on those of lowered vitality, in connection with which absorption must be promoted. The destruction of the organism is accomplished indirectly through the reaction induced in the tissues. General systemic measures and the closing of avenues of infection are most essential as adjuncts to the treatment and in the prevention of recurrence. The treatment should be modified in accordance with three types of cases. In the first, with enlargements which formerly would have been regarded as having just reached an operable stage, radiation, if properly applied, should be the only local measure required in all instances. The second group includes cases with one or a few very large glands not yet undergoing perceptible caseation. Conservatively speaking, most of these are primarily operative cases, but only the largest glands need be excised, the smaller ones being left to postoperative radiation, thus simplifying the operation and minimizing the scarring. The third group embraces cases which have passed beyond the stage of beginning caseation, and which are primarily operative. Here again, postoperative radiation will simplify the operation, and in addition, will promote healing of sinuses, and also yield far better cosmetic results by minimizing scar formation or reducing excessive scar tissue.

DR. H. F. PITCHER, Haverhill, Mass.: Psoriasis is certainly incurable in most cases. I had a case when I first started in Roentgen treatment. The patient, a man, 55 years old, had

had psoriasis thirty years. He had been treated by some of the best dermatologists in this country and Europe. His body and head, except his face, were practically covered with scales; he was bald. Every morning he swept up from out the sheets enough scales to fill a dustpan. He was a widower and was to be married within the next six months and wished to have a clean skin. It was the first case I had treated with the Roentgen rays. The patient was recommended to me by a dermatologist of Boston, who had seen the treatment in Germany but had never used it himself and was much interested in the outcome. I began to treat one section of the body at a time, giving ten- or fifteen-minute treatments, but the patient was so impatient that he could not wait for so slow a process, but wanted one to treat the whole body at one time. So I treated different sections for about ten minutes at a time and gave him hourly treatments twice a week. The patches cleared up very rapidly and in about six weeks he was practically clear of the scales. When I came back from my vacation at the end of a month, he was nearly as bad as ever. I omitted proteins from his diet and gave high colonic injections; I also gave him the *x*-ray treatments three times a week. In about three months he was practically well and has remained so for twelve years.

DR. ALFRED L. GRAY, Richmond, Va.: A surgeon on the staff of one of the largest hospitals in America was much surprised to hear me say that I had had good success in the treatment of tuberculous glands. I began the treatment of tuberculous glands with much skepticism. The patient, a young society girl, had a brother who had had a number of glands removed from his neck about twelve months before, leaving a wound that was slow to heal and an ugly scar. This young lady had a large tuberculous mass just in the submastoid region and in seventeen treatments she was apparently cured. She never had a recurrence and I was as much surprised as the physician who sent her to me. There is one thing it might be well to bear in mind. Long-standing cases of tuberculous glands require a series of treatments and often the scar tissue which has necessarily formed will require some time to be absorbed and disappear. The consequence is that while the glands may be greatly reduced during treatment, they may not entirely disappear for six months or a year afterward. If the gland is not suppurating I can probably make it go away, but if it is I will make it break down more quickly, so that it can be incised and drained. The destructive effect of the *x*-ray on the gland tissue that is already breaking down will cause a more complete and rapid disintegration. On the other hand, if it will break down slowly without suppuration the material can be gradually absorbed so that the gland will steadily and painlessly disappear. I believe, after my experience in treating tuberculous glands, that there is perhaps no case in which a surgeon is justified in excising a non-suppurating tuberculous gland if the *x*-ray is available.

DR. GEORGE E. PFAHLER, Philadelphia: The Roentgen treatment of fibroid of the uterus, which comes under these benign tissue growths, has become such an established form of treatment connected with the leading gynecologic clinics in which the treatment is recommended favorably, that we are bound to give it some attention. I have treated twenty-four patients and some of them are well five and six years after treatment. In no line of treatment have my results been so uniformly good, so that I am really enthusiastic in the treatment. The technic is that used in all deep-seated work.

DR. SIDNEY LANGE, Cincinnati: The influence of the *x*-ray on the thymus is not very well known. Its influence is so pronounced and so positive that it seems to me almost a specific form of medication for enlargement of the thymus in very young children, or persistent thymus in older children. The first application of *x*-ray to an enlarged thymus was made in 1903 by Friedlander and Crane. The child made a complete recovery and is now living and well. Since that time but one other case (except my own series) has been recorded by Myers of Minneapolis in which this form of treatment was tried with good results. Several years ago I was asked to make a series of experiments on young animals to prove this action. I selected young rabbits since they have a relatively enlarged thymus and in a careful series of experiments, all of the experiments being carefully controlled, I found that very few *x*-ray exposures would cause atrophy of the thymus. Since the thymus tissue is a very young tissue more or less embryonal in type and destined to disappear ultimately, the cells are not of the highly differentiated fixed type of the organism and are very susceptible to radiation. I found that the thymus of a young rabbit could be made to disappear in a period of three weeks, without causing Roentgen alopecia of the anterior surface of the chest, showing how susceptible the thymus tissue is to the *x*-ray. These experiments were preceded by several successful cases that we had treated. Following the experiments I was fortunate enough to treat three or four more, in all of which there was a positive improvement at once. The microscope has backed up these experiments showing the influence of the *x*-ray in a very remarkable way and by such a simple experiment anyone can satisfy himself of this action in a few weeks' time. The thymus cells begin to show granules, the nuclei become fragmented, disappear and the thymus cells diminish in number and overgrowth of connective tissue occurs. Some of the rabbits were killed after ten or twelve exposures and just shriveled remains of the thymus were found, whereas the control rabbit had big white plump glands.

I am convinced that this condition is overlooked in many children; some of them die with intercurrent disease or the condition may be diagnosed as enlarged mediastinal glands; some of the cases are passed over as congenital heart disease. A few *x*-ray exposures in case of doubt might clear up the condition and in such doubtful cases the *x*-ray may be applied as a therapeutic test. If the condition is an enlarged thymus improvement should follow. *X*-ray exposures may thus serve to differentiate this condition.

DR. OLIVER T. OSBORNE, New Haven, Conn.: How does the treatment of the enlarged thymus affect the thyroid gland? Is there any inhibition of thyroid secretion? What is the value of Roentgen therapy in Graves' disease?

DR. RUSSELL H. BOGGS, Pittsburgh: The subject is entirely too broad and too important to discuss in a few words. I might state, however, that brilliant results have been obtained in marked exophthalmos, even reduction of the size of the thyroid with entire relief of the symptoms after a few *x*-ray treatments.

ESSENTIAL, OR PRIMARY, LATERAL SCLEROSIS *

JAMES HENDRIE LLOYD, M.D.
AND
S. D. W. LUDLUM, M.D.
PHILADELPHIA

CLINICAL REPORT BY DR. LLOYD

This subject, as I understand it, remains at the present time in much the same state as it was in nearly forty years ago. Even the definition of the term is not more precise; therefore, before the subject itself is discussed, this matter of definition should be considered.

By *primary* lateral sclerosis, as the term is commonly used, seems to be meant a disease of the lateral, or motor, tracts, which is not the result of a secondary degeneration following on an initial lesion cutting off the degenerated tracts from the motor cortex of the brain. The process of wallerian degeneration in the motor tract is well known; it follows on a lesion cutting off the motor fibers from their cell bodies in the brain cortex; it is largely a downward degeneration, although not exclusively so, for upward degeneration is also noted. Such a lesion can be of any kind and anywhere in the course of the upper motor neurons. It may be a hemorrhage or a tumor or a spot of softening in the brain;

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

or it may be a trauma or a meningomyelitis in the spinal cord. All that is required is that it should cut the motor fibers somewhere in their course and thus set up a descending, or wallerian, degeneration. This is such a well-known pathologic picture that it need not be enlarged on. It is seen in hemiplegia, in transverse myelitis, in syphilitic meningomyelitis, in trauma of the spinal cord, in multiple sclerosis, in syringomyelia and in other lesions.

In primary lateral sclerosis, if such a disease really exists, there is no such focal lesion, but the degeneration of the lateral tracts is *sui generis*. It occurs by reason of a disease process which is, in a sense, spontaneous in the lateral tracts themselves. In order, however, that this somewhat ideal state should exist, there are several requirements. In the first place, the process should exist only in the lateral tracts and should not extend to them from surrounding tissue, as for instance, from a myelitis or a meningitis. In the second place, as already said, it should not arise from a focus of disease situated cephalad of the degeneration. In the third place, it should not be associated with any other system disease, as in the posterior columns or in the anterior horns.

There is one disease, which will occur to all, in which in a sense the disease of the lateral tracts is apparently a primary sclerosis. I refer to amyotrophic lateral sclerosis. This is primary in the sense that it does not follow any known focal lesion; the lateral tracts simply become involved, more or less as a whole, in the cord; in other words, it is a system disease. But amyotrophic lateral sclerosis is associated with disease of the anterior horns; consequently it is not a purely lateral tract disease. It is also sometimes associated with bulbar paralysis. Therefore, it seems to me, if we wish to distinguish a purely lateral-tract system disease, of the kind here indicated, a better term for it would be "essential lateral sclerosis." The disease would be primary, of course, but this term, as I have said, applies also to amyotrophic lateral sclerosis. By the term "essential" would be indicated the fact that the disease is a purely system disease confined to the lateral tracts.

The problem involved in this conception has engaged the attention of neurologists for many years. It is not a new subject. Erb is usually credited with having had such a disease in mind when in 1875 he wrote of spastic spinal paralysis, but this term can include much more than the affection here discussed.[1] Charcot about the same time came nearer to hitting on this idea when he wrote of *tabes spasmodique*. This is a happy term, because it points to an essential lateral sclerosis in much the same sense as ordinary tabes is regarded as a system disease of the posterior columns. The two affections might be considered analogous, one in the lateral, the other in the posterior, tracts. Gowers, in his text-book, wrote a rather extensive chapter on primary lateral sclerosis, in which, however, beyond discussing the subject as a pathologic problem, he really contributed little if anything to its solution. It is not my intention to go into an extended discussion of the literature of the subject. In recent years Spiller[2] has published a paper, based on eight cases, but these cases were mostly examples of amyotrophic lateral sclerosis. Gordon,[3] in 1911, reported a very interesting case, which came as near as any case I have read about to being a true example of essential lateral sclerosis. He also cited a number of examples from other observers.

Dr. Mills' name is identified with the condition known as unilateral, progressive, ascending paralysis, in which the lateral tract of one side is first involved, and the leg is affected before the arm.[4] In such cases, I think, observation extending over a long period tends to show that the disease in time becomes bilateral. Mills' disease may therefore be a true example of a progressive, essential, lateral sclerosis. It is probably a very rare affection. I think, however, that all cases in which in the course of time the anterior horns become involved, and especially in which bulbar symptoms develop later, should be excluded from the category of primary or essential lateral sclerosis. This exclusion applies equally, of course, to the early stages of multiple sclerosis, in which the lateral tract may be among the first parts involved.

Little's disease has been described by some authors as though it were essentially a lateral sclerosis, but Little's disease is properly a birth-palsy and in the majority of cases is doubtless due to trauma. Besides, the term is a bad one and has probably been made to include various diseases.

The relationship of amyotrophic lateral sclerosis to progressive muscular atrophy is doubtless a close one—in fact, the two may be only different expressions of one and the same pathologic process. But this is a subject which need not be discussed here. It leaves untouched the question whether we have such a disease as essential lateral sclerosis.

From the clinical standpoint something can be said in favor of an essential lateral sclerosis. I have certainly seen cases (although they are not frequent) in which no parts of the cord appeared to be involved except the lateral tracts; in which the disease was apparently not the result of a focal lesion, or of a meningomyelitis; the sphincters were not involved; there was no true muscular atrophy, and the condition was progressive. Only recently I have seen such a case in the Philadelphia Hospital.

CASE 1.—The patient, a man, began two years ago to have a sense of pain or fatigue in his spine. He began to lose power and gradually developed a spastic paralysis in all four limbs. He is now the victim of a hypertonia, with loss of power in his arms and legs, the arms being almost as much involved as the legs. The deep reflexes of the arms and legs are all much exaggerated. The bladder and bowel are not implicated. There is no more atrophy than could be explained by disuse, unless it be in some of the small muscles of the hands. A few very faint fibrillary tremors are sometimes detected in the shoulder muscles. There are no bulbar symptoms. The only doubtful element in the case is the condition of sensation. The patient has been frequently tested by various observers, and the results obtained are not uniform. Sometimes there has been apparently an entire hemianesthesia, but again he has shown a large segmental band of anesthesia involving his whole trunk. But he has been so frequently examined in hospital routine that I suspect that these varying and incongruous phenomena are probably the results of suggestion—in other words, hysterical. When I last examined him a few days ago he maintained that he could distinguish touch in hardly any region of his body, even the face. I know no organic lesion which would cause such a wide-spread loss of sensation. It is difficult for me to see how a meningomyelitis could be so

1. Erb returned to this subject in an address in London in 1902, in which he referred to ten cases gathered from the literature, which he regarded as true examples of primary bilateral sclerosis (Lancet, London, 1902, p. 970).

2. Spiller: Univ. of Pennsylvania Med. Bull., 1905. In another paper, read before the American Neurological Association at Boston a few days before my paper was read at Atlantic City, Dr. Spiller discussed the subject of syphilis as a cause of spinal muscular atrophy, lateral sclerosis and amyotrophic lateral sclerosis. I have not had the opportunity of reading this paper.

3. Gordon: New York Med. Jour., Jan. 6, 1912.

4. Mills: Jour. Nerv. and Ment. Dis., April, 1900; July, 1903; THE JOURNAL A. M. A., Nov. 17, 1906, p. 1638.

extensive as thus to involve both arms and both legs, without involving the sphincters, or the anterior horns, or without giving definite and constant sensory symptoms. The lateral tracts are alone indubitably involved, and in their whole extent. The man denies syphilis, but the Wassermann test is positive. An *x*-ray picture shows no lesion of the cervical vertebra.

The following case from the same clinic is also suggestive of an essential and ascending primary sclerosis, although syphilis cannot be excluded. Indeed syphilis is doubtless the cause. There is also a history of exposure to lead.

CASE 2.—J. D. White, aged 33, plumber, noticed five years ago that he easily became tired in his legs. For example, he found difficulty in lifting his feet while climbing stairs. The condition very gradually grew worse until the present condition of loss of power was reached. He has been unable to work for three and a half years. While he was still able to work after the weakness started, he experienced pain over the lumbar spine during any manual labor.

Nervous Examination.—Gait: Patient is unable to walk. Station: He can stand on his legs, but only with a great deal of difficulty. He loses balance as soon as his eyes are closed. Legs are spastic to passive movements. There is no spasticity of the arms. Reflexes: All reflexes of the upper extremities and of the shoulder-girdle are exaggerated. There is slight paralysis of the extensor muscles of the forearms. Reflexes of the lower extremities are very markedly exaggerated and the Babinski sign and ankle and patellar clonus are present. Abdominal reflexes are absent; cremasteric reflexes are present. There is no muscular atrophy. Sensation: All modes of sensation are intact. The bowel is not involved. The patient urinates more frequently than usual. He must perform the act as soon as he has the desire. The stream is forced, but dribbles out. Eyes negative.

Laboratory Findings.—*X*-ray of dorsal lumbar spine negative. Wassermann positive. Blood examined for basophilic degeneration to prove or disprove lead-poisoning, negative. Urine, negative. This case may possibly be an example of spinal syphilis, in which the meninges are involved, but the gradual and late involvement of the upper extremities is rather against this view.

I have but one suggestion to make in reference to this whole subject, and that is on the question of syphilis. Have we a syphilitic disease of the cord in which the whole expression of the disease is manifested in the lateral tracts, but which is not the result of a meningomyelitis? Is there a true parenchymatous disease of the motor protoneuron—a disease which might be called an analog to posterior sclerosis? I am aware of the fact that opinions differ about the initial lesion in tabes, whether it is a meningitis, or a disease of the posterior roots, or, as Ferrier seems to maintain, whether it is merely a degeneration of the neuron itself. These are fine points, but, with reference to the lateral tracts, they seem to take us back to Charcot's idea of a *tabes spasmodique*. The Wassermann test will doubtless have something to do with settling the question of their syphilitic nature, and the pathologists will have to do the rest. It remains to be determined whether such cases as I have had in mind are really the result of a syphilitic process, in which the blood-vessels and the meninges are primarily involved, or whether they represent a purely degenerative disease of the lateral tracts. It is possible that Dr. Ludlum's study of our case may throw some light on this obscure question.

PATHOLOGIC REPORT BY DR. LUDLUM

The object of this paper is to emphasize three points:

1. The exhaustion theory, which has been shown to be applicable to tabes by Edinger, is that biochemical changes in the blood in cases of syphilis retard the anabolic processes in the cells, of which the catabolic changes due to function overbalance the anabolic ones. Mott has shown in tabes that the distal ends of the neurons degenerate before the portions adjacent to the supposed thickened pia. This, we think, would be more applicable to primary lateral sclerosis than to tabes.

2. Another fact is that the point at which the degeneration is demarcated is, in most cases of lateral sclerosis, exactly at the decussation of the pyramids, which point is also where the basilar artery divides into the two vertebrales and they in turn give off the anterior spinal arteries.

3. In the case here examined, there was a lymphocytic infiltration of the pia which is distinctly suggestive of syphilis.

CASE 3.—The patient was a man of 70 years. He had been on his feet at work until shortly before his admission. His legs first were weak and then quickly became spastic. The arms showed no loss of strength but were unsteady when voluntarily moved; the reflexes slightly increased. The lower limbs were drawn up and so spastic that it was difficult to elicit any reflexes. A sufficient response to stroking the sole of the foot was made to establish a Babinski reflex. There was no deviation from normal sensory phenomena other than could be explained by mental confusion. The sphincters had become paralyzed because of their spastic condition and resulting distention. There was no atrophy of muscle in upper or lower limbs or in cranial distribution. The picture was one of paraplegia. The brain presented no gross lesion other than a small area of softening in the right parieto-occipital region which was in no relation to any motor fibers.

The cord showed no gross lesions; the vessels of brain and cord were sclerotic but not markedly so. The membranes appeared normal. Microscopic sections were normal of internal capsules, peduncles and pons. Just below the decussation of the pyramids, sclerosis of the crossed motor tracts was plainly discernible, perhaps more on one side than on the other. This observation was repeated in the thoracic and lumbar regions. In all levels of the cord, the cells in the gray areas were normal in appearance and number; that is, they were normal for a man the age of this patient, and there was no evidence to make one think that they were diseased. Throughout the length of the cord, the anterior and posterior roots showed no degeneration. The pia about the cord displayed a mild lymphocytic infiltration, not such as we see in acute disturbances, but as is observed in long standing states, notably syphilis.

In three cases recently examined clinically, a positive Wassermann reaction gave positive results. There is a striking resemblance between all tract degenerations, such as amyotrophic lateral sclerosis, essential lateral sclerosis, and tabes, namely, that this infiltration is seen and that syphilis is usually present.

Thus it would appear that the overaction or exhaustion of certain sets of neurons in a serum in which there is a distinct chemical alteration, as when syphilis is present, would result in the degeneration of that system abiogenetically the weakest.

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ABSTRACT OF DISCUSSION

DR. WILLIAM G. SPILLER, Philadelphia: In the syphilitic systemic diseases of the motor tracts, I include lateral sclerosis, amyotrophic lateral sclerosis and progressive spinal muscular atrophy. I have not come to the conclusion that all such cases are syphilitic in origin, but I think a portion of them are.

For many years the syphilitic origin of tabes was a disputed subject. We find in tabes a systemic degeneration of the

posterior columns. In some of these cases there is a slight infiltration of the pia and little or no thickening of the blood-vessels. I see no reason why we should not have a syphilitic degeneration of the motor system. I am not convinced that muscular atrophy occurring with syphilitic disease of the spinal cord is merely an associated condition. In determining the possible syphilitic origin of spinal cord disease from a pathologic standpoint, independently of the Wassermann reaction, we should depend, I think, on lymphocytic infiltration of the meninges and thickening of the blood-vessels. In some cases we will not find even this infiltration. We ought to find it, however, with a frequency which would suggest a syphilitic origin. I believe that a lymphocytic infiltration is of the greatest value from a pathologic diagnostic standpoint with reference to syphilis. It is not pathognomonic of syphilis but merely one of the links in the chain of evidence. That is the whole trend of modern German thought, as shown in a recent paper by Nonne, who has said that lymphocytosis of the cerebrospinal fluid occurs in the true syphilitic and parasyphilitic diseases of the nervous system, whether they are progressive or have been arrested. The cause of this lymphocytosis is to be found in meningitis. Lymphocytosis of the cerebrospinal fluid occurs in a considerable number of individuals who have been infected with syphilis but have shown no symptoms. Nonne believes that only those syphilitic persons develop nervous syphilis who have a lymphocytosis persisting after antisyphilitic treatment. He belives also that the lymphocytosis may be influenced by antisyphilitic treatment (*Deutsch. Ztschr. f. Nervenh.*, xliii, Nos. 3-6).

In lymphocytosis, therefore, we have a very valuable sign of syphilis. It is not absolutely pathognomonic, of course. There are very few signs that are pathognomonic. The Wassermann sign is of the greatest value in syphilis but it has been found in measles and scarlet fever, and has been reported as occurring in lead-poisoning, and lymphocytosis occurs in various conditions, poliomyelitis, for example, but usually we can exclude such conditions in judging of the syphilitic origin of a disease.

DR. C. L. DANA, New York: Dr. Spiller has deviated a little from the subject of primary lateral sclerosis, though I agree with his sentiment as to the importance of the syphilitic factor in some types of progressive muscular atrophy. The point Dr. Lloyd brings up for discussion is whether there is not a progressive lateral sclerosis which goes on in just the same way as a progressive posterior spinal sclerosis, i. e., tabes, and due probably in some cases if not in all to syphilis. Now, I am absolutely sure clinically that there is such a disease. I have seen and watched for a number of years patients who have begun with the ordinary symptoms of Erb's spinal paralysis. These patients developed a progressive spinal spastic paraplegia, year after year getting a little worse and worse, and going on in just the same way progressive tabetics do, when we do not get them under control. This so impressed me some years ago that I have taught that syphilitic spinal paraplegia has two types, in one of which the disease becomes arrested or practically recovers, while in the other the disease goes steadily on with perhaps some arrest or temporary remission, forming a progressive spastic paraplegia of luetic origin. I can quite confirm Dr. Lloyd's opinion that there is such a condition. I know there is clinically; and I always expect when I get a case of spinal paralysis of luetic origin to have it either controlled and cured or else to have it go on steadily like a tabes, to which it has absolute analogies.

DR. ALFRED GORDON, Philadelphia: In my work to which Dr. Lloyd has reference I was unable to determine any evidence of involvement of any other tract except the cross pyramidal beginning at the level of decussation. The patient presented a primary paralysis downward. The question is what could be the nature of the trouble. There is no question but that syphilitic infection may produce all varieties of organic affections of the central nervous system. Philadelphians will recall that I exhibited a case of a middle-aged woman who had a number of miscarriages, who developed and presented on several occasions a strong positive Wassermann reaction, and who developed a progressive muscular atrophy of Aran-Duchenne's type also in the peroneal group of muscles. That case was unquestionably to my mind one of the class to which Dr. Spiller referred, and there is no doubt that syphilis is capable of producing primary lateral sclerosis. But how about those cases in which we do not find lymphocytic infiltration or any evidence of syphilis? It is in such cases that there must be something inherent, something congenital, some defect, some anomaly in construction and development, a primary anomaly in the pyramidal tract. I believe that the cases, beginning with Erb's and Charcot's and those following, including Dr. Lloyd's case and my own, must belong, like amyotrophic lateral sclerosis, syringomyelia and progressive muscular atrophy, to an anomalous non-syphilitic class, to abiotrophies.

DR. W. M. LESZYNSKY, New York: Since the introduction of the study of the cerebrospinal fluid and the serum Wassermann reaction, I have made it a point to have my patients brought to the hospital and carefully studied in that regard. Within the last year, I have had several patients of this type, cases that are familiar to all of you clinically. A woman, aged 25, without any history of syphilis, or traumatism, or previous history of acute spinal cord trouble, gradually develops the usual type of spastic paraplegia with the customary symptomatology. Careful study of the cerebrospinal fluid reveals no lymphocytosis, or any of the different phases, described as indicating syphilitic infection, and the serum Wassermann reaction is negative. In spite of negative laboratory findings, patients of this type have been given a thorough course of antisyphilitic treatment without benefit. Such patients cannot consistently have their disease ascribed to a syphilitic infection, particularly if we are to lay any stress on the present-day methods of study of the cerebrospinal fluid and the blood-serum. We have observed such cases for many years, and with our present knowledge, to call them anything else but primary lateral sclerosis, it seems to me, would be out of the question.

I remember the earlier teachings of Dr. Dana in regard to the matters he just mentioned, and I do not believe that he has any reason to change the views he held twenty-five years ago.

DR. ARTHUR C. BRUSH, Brooklyn: We do not see these cases post mortem until a long time after the disease has begun, and the lymphocytosis and other evidences of syphilis may disappear.

DR. E. E. SOUTHARD, Cambridge, Mass.: No one disputes that lymphocytosis arouses strong suspicion of syphilis. Yet to rely on mononuclear infiltration as a sign of syphilis seems to be harking back to the pathology of a decade ago. We ought to rely on the Wassermann and kindred reactions and on more extended studies of cases that are to come rather than on lymphocytosis exhibited in cases past.

Dr. Wilder Tileston had a case of ankle-clonus in a child that died of pneumonia. The autopsy showed, at the decussation, a lymphocytic infiltration of the artery. There was a certain amount of degeneration of fibers all over the spinal cord. The question arose, was the clonus due to that lesion? What might the case have been? It might have been a case of pneumococcus meningitis in which the coccus had caused the infiltration. It might have been a case of pneumonia complicated by a case of anterior poliomyelitis or pneumonia complicated with syphilis. But I do not see how the suspicion of syphilis is raised in any strong degree. But in this case I think more likely the exudate was produced by the pneumococcus. Is Dr. Spiller dealing with more than a suspicion? It seems to me he is not dealing with proof when he speaks of mononuclear infiltration in these cases. Aside from the acute production of lymphocytosis in the late stage, which can also be shown to occur both in human cases and experimentally, I see no reason for deviating from the attitude adopted about this matter last week.

DR. ALBERT E. STERNE, Indianapolis: Twenty-five or thirty years ago von Leyden showed the relationship between amyotrophic lateral sclerosis, progressive muscular atrophy and progressive bulbar palsy. He made the statement that essential lateral sclerosis was, to his mind, exempt from such rela-

tionship. That attitude I do not see any reason for changing to-day. As a matter of fact, cases of amyotrophic lateral sclerosis, which we are wont so to recognize, bear very different ear marks from those cases which we are wont to see and speak of as tabes lateralis or primary lateral sclerosis. It is to my mind unfair, and it is not even altogether scientific, because an individual has suffered and shown typical clinical manifestations for twenty-five years, indicating essential lateral sclerosis, and then just before death manifests certain symptoms of association with the anterior horns, to say that on account of that late association, the former disease, namely, the primary lateral sclerosis, was not a disease *per se*, but simply a long drawn-out manifestation of what we would ordinarily call primary amyotrophic lateral sclerosis. This late association, which we find also in other diseases of the nervous system, such as epilepsy, in which degeneration occurs, ought not, it seems to me, to take from beneath our feet the safe ground, that there is a rare disease which affects the lateral columns of the cord alone; that this disease is essential or primary lateral sclerosis, and that it may be often syphilitic in type. There is no question at least on that subject.

DR. J. H. W. RHEIN, Philadelphia: I have seen and reported cases which showed round-cell infiltration associated with degeneration of the lateral columns without any evidence of a gross lesion in the cerebrum to account for it, cases which I have worked on as instances of cerebrospinal syphilis. I shall report this afternoon a similar case. I have reported cases under the name of double hemiplegia in which there was no gross lesion to account for the degeneration in the lateral columns. I believe that in these cases in which the lesion is microscopic it is essential to make serial sections in order to make a positive pathologic diagnosis. We find in these cases a specific process and associated blood-vessel disease involving not only the white matter and pia of the brain but also the spinal cord. I believe that in Dr. Lloyd's case there was some blood-vessel disease as well as round-cell infiltration, and it occurred to me that this was really not an ordinary case of lateral sclerosis, but perhaps one of syphilitic cord disease.

DR. J. H. LLOYD, Philadelphia: Dr. Spiller has touched on the important point involved, which, of course, as we all recognize, is the question of syphilis. It may be that in reference to these primary lateral tract degenerations we are somewhat in the same position now that we were twenty or twenty-five years ago with reference to posterior sclerosis. At that time we were only gradually coming to the belief that tabes was due to a syphilitic infection. I think that, with the Wassermann test and with increased facilities and improved technic for pathologic studies, it may yet be found in these cases of essential lateral sclerosis that we have to deal quite largely with a syphilitic process. If that be true, the mere determination of whether or not the disease process is entirely in the lateral tracts or partly in other tracts, becomes in a sense a matter of secondary importance. I think as a term, however, it would be better that we should call this condition an essential lateral sclerosis. Dr. Southard has very wisely called attention to the fact that we should not allow our minds to dwell too exclusively on syphilis. There are other infections of the central nervous system besides that which is caused by the spirochete of syphilis. I fully agree with the statement that we may possibly have here occasionally the manifestations of some other infection.

DR. S. D. W. LUDLUM, Philadelphia: In answer to Dr. Rhein: there were no hemorrhages, embolisms or anything of that sort which would cause the disturbance.

A New Fish Story.—An American, touring in his automobile in Southern Bavaria, on renewing the carbid charge in his acetylene generator, emptied the old carbid into a small stream—probably out of pure thoughtlessness. The result, however, was a summons from the authorities and a suit for damages for having killed a large number of bass in the river by the gases developed from the carbid residue.

REPORTING OF SUSPICIOUS CASES BY THE LAITY A PREREQUISITE TO THE EFFICIENT CONTROL OF COMMUNICABLE DISEASES *

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The more or less effective regulations to protect the public from persons afflicted with a contagious disease are naturally enforced only in cases that are reported to the health authorities. The unrecognized case is subjected to no restrictions at all; the recognized but unreported case only to those the family voluntarily observes.

It has been my belief that the spread of contagious disease occurs chiefly through the unreported and particularly the unrecognized cases. Until every case is brought under the control of the health authorities no real progress will be made toward limiting or stamping out communicable disease.

UNREPORTED CASES

For each reported case of notifiable disease there are many unreported. Some physicians even make a practice of not reporting their cases, for which very reason they are employed by families who desire to avoid restrictive measures. A premium is thus placed on dishonesty, the physician who evades the law gaining practice at the expense of the honest practitioner. It is foolish to expect all medical men to report their cases of contagious disease so long as no effort is made to find out and punish those who violate the law.

In many instances, especially when the attack is a mild one, no physician is consulted, lest he report the case. The mother herself treats the patient with home remedies. This is true particularly of secondary cases, in which treatment is carried out according to the directions the physician gave in the primary case. Naturally many mistakes of diagnosis are made, the most serious being the mother's mistaking mild scarlet fever for measles or rubella, or even a stomach rash.

Persons who would not object to have the disease reported often dispense with a physician for financial reasons when the patient is only slightly ill. Such cases without medical attention could be brought to the notice of the health authorities if, in the absence of a physician, the parent or householder were required to report notifiable diseases, as they are now compelled to report a birth.

UNRECOGNIZED CASES

The most potent source of contagion in my opinion is the unrecognized case; for the family usually takes some precautions in regard to a recognized case that is not reported. Even a physician sometimes fails to recognize a contagious disease, especially when it occurs in a mild or atypical form. Without a culture, for example, it is practically impossible to diagnose latent diphtheria. In most instances, however, the fault lies with the parent, who does not regard the condition as sufficiently serious to warrant sending for a doctor.

Thus it is that large numbers of children with mild or latent diphtheria are looked on as suffering from sore throat or tonsillitis and, instead of being isolated, attend school, frequent moving-picture shows and mingle freely with their playmates, inoculating many who thus

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

become carriers or who may even have the disease in typical clinical form, and these children never know how they contracted the disease. I have already gone into this subject more fully.[1]

In like manner numerous persons with unrecognized scarlet fever walk about the streets and attend school, especially during an epidemic of measles or rubella. Many of these cases are never known; some are discovered merely by accident. To illustrate, I shall recite the accidental discovery by me in one month of eleven cases of scarlet fever during an epidemic of measles.

May 21, 1911, I was sent as medical inspector to examine a child who was reported by the attending physician as having scarlet fever, but whom the ambulance physician had pronounced not to be suffering from the disease. After confirming the attending physician's diagnosis, I inquired if anyone in the house had been sick recently, and was shown two children who were said by the mother to have had measles. Both were desquamating. On asking if there were any cases of rash or measles in the neighborhood, I was referred to two children in a house on the next street, who were supposed to have had measles, but whom I found in active desquamation. Had a third case not developed in the first house, these four cases probably never would have been discovered.

Three weeks later, June 14, I was sent to examine a child reported by the attending physician as having a suspicious case of scarlet fever. The physician had not been summoned for the general illness but for an infected burn produced by a home-made mustard plaster. I made a diagnosis of scarlet fever and, inquiring for other instances of recent illness in the house, found a child of another family in bed on another floor, supposedly suffering from measles but really in the eruptive stage of scarlatina. I also obtained a history of three other children in the house having been successively attacked with measles during the previous two months, but on examining two who had been ill six and eight weeks before, respectively, could find no evidence of desquamation. The third child being in school, I examined her there and found her hands peeling. She was living temporarily with a married sister whose baby she said had had the measles, but whom I found to be convalescing from scarlet fever. These four cases would probably never have been known had one patient not been burned by a home-made plaster. As it was, two additional patients with probable scarlet fever got well without recognition.

How easy it is to miss the mild case that often starts an epidemic may be seen from the following instance, which occurred a few months later: Two children developed a rash but were not very sick and received no medical attention. Half a block away a case of scarlet fever developed, no one knowing how the disease was contracted. Five days later a case of scarlet fever was reported from the house where the two children had been indisposed. While making a report on this latter case, I learned of the illness of the other two children and examined them, finding evidence of desquamation in both.

Measles and rubella, especially when occurring in a mild form, frequently fail of recognition, being called "strawberry rash," "stomach rash," "spring rash," "ivy poisoning," "hives," and the like. Mild attacks of mumps of short duration, with very slight enlargement of the parotid gland and no distress on eating sour things, are usually overlooked or regarded as "swollen glands," "glandular fever" or an "ulcerated tooth." Sometimes chicken-pox is unrecognized. Until the "whoop" develops, parents as a rule pay little attention to whooping-cough. Seldom in these various instances is a physician consulted.

Is it any wonder that health officers are disappointed at the high incidence of preventable communicable diseases despite the most modern methods of combating them? How can anyone expect that the control of a mere fraction of the total number of cases of contagious diseases will do much toward stamping them out? Be the isolation of the reported cases ever so thorough, infection still proceeds from those who are going about unrestricted with unreported and unrecognized cases. All efforts to stamp out communicable diseases must necessarily fail until the public health authorities gain control of all the cases.

Is there any way by which the unrecognized and unreported cases can be brought under the supervision of the public health authorities? Is such a thing not impossible? I believe it to be not only possible but practicable. Nearly every case of illness is known to a number of persons, who usually also are aware when there is a suspicion of its being contagious.

REPORTING OF SUSPICIOUS CASES

Many of the cases not reported to the health authorities are reported to other public officials. The vast majority occur among school children or in their homes, a large proportion during the school term. In such cases the parent often notifies the school of the child's illness, sometimes giving the name of the disease. When this is not done it is customary for the teacher or principal to send word to the parents asking the reason for the child's absence. In many cities an attendance officer visits the home to learn why the child is not in school. It would be a perfectly easy matter for teacher, principal or attendance officer, on learning of the existence of a contagious disease, to report the case to the health authorities, who thereupon might investigate. Even when such disease is only suspected, the report of a suspicious case might be made, giving the grounds for the suspicion. This would include all cases of rash under any name, rumors brought by the school children, and unexplained or inadequately explained absences, especially during an epidemic. In schools having medical inspection the case might first be referred to the school doctor, who would decide whether the facts warranted the case being reported to the public health authorities as suspicious.

Neighbors as a rule know what is going on in each others' homes. The recognized but unreported cases of which they have no knowledge are, indeed, few. Of the suspicious cases they also usually have cognizance. Most persons, however, dislike telling on their neighbors for fear of incurring annoyance or inciting enmity. Some even side with their friends against the sanitary officials.

It nevertheless is my belief that if the laity were educated to realize the danger to themselves and their families as well as to others of the uncontrolled case, and the insidiousness of the unrecognized case, if they were frankly told that the prevention of communicable disease is possible with their aid and impossible without it, and if, moreover, they were taught to regard it as a civic duty to give this aid in the protection of the public health, their cooperation could be obtained. But then the responsibility would be on the sanitary authorities

1. Solis-Cohen, M: Latent Diphtheria; a Public Health Problem, THE JOURNAL A. M. A., July 6, 1907, p. 30; Diphtheria Carriers, Their Discovery and Control, THE JOURNAL A. M. A., Jan. 9, 1909, p. 111.

to see to it that the good do not suffer while the evil escape. It would be their duty to enforce the laws against all and to prosecute those who break them. They will know when a physician has failed to report a case and they will be expected to hold that physician strictly to account. And should a law be passed requiring the householder to report contagious and suspicious cases occurring in his house, they must proceed against all who are found violating that law. For the cooperation of the public is not to be hoped for in any unfair administration of the law that subjects those who comply with it to restrictive measures which those who disregard it are permitted with impunity to escape.

Without the aid of the laity I believe it is impossible to stamp out communicable diseases. With their active assistance I have little doubt that it will be possible to prevent most of the contagious diseases which hitherto have not been effectively controlled.

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ABSTRACT OF DISCUSSION

MR. W. A. HOWE, Albany, N. Y.: We are coming more and more to believe and to know that most of our communicable diseases are transmitted by carriers—that it is not so frequently the bedridden patient who is transmitting disease, as the person with unrecognized disease. Here as elsewhere in our work we must conduct an active campaign of education to teach, through the family physician, the parents of these carriers and many dangers incident to the prevalence of such disease. There is but one way to reach them—not through the neighbor, as I do not believe it is either right or neighborly to expect a neighbor to report clandestinely the presence of communicable disease in the next-door family, but through the family physician, who should place in the hands of the mother, proper literature explaining the danger of these diseases, their extensive prevalence in these mild forms, and the imminent danger of spreading fatal infection to others. We must teach them the necessity of giving better attention to the convalescent, and the absolute necessity of proper isolation, however mild the affection may seem to be, until the child ceases to be a carrier.

DR. WALTON FOREST DUTTON, Carnegie, Pa.: It seems to me that the general practitioner receives much more censure than is his due, as regards the report and care of these diseases. The laws should be enforced, but the blame should be placed where it belongs. If local health authorities were prompt in doing their duty, the physician and the state could cooperate with distinct advantage to both. It does not avail anything for the physician to report diphtheria, scarlet fever, etc., unless the sanitary regulations are carried out by the local health authorities. A great many boroughs have an ordinance which is a modification of the state laws. This ordinance does not comply, in full, with the state law. Therefore the physician is not enabled to do his full duty to the state. I concur with what has been said by Dr. Cohen. The reporting of suspected cases is a prime necessity. We can very often detect measles on the mucous membrane of the soft palate and other parts of the buccal cavity one or two days before the eruption appears. The same may be said of diphtheria and scarlet fever.

DR. OTIS B. NESBIT, Valparaiso, Ind.: The health officer too frequently goes and tacks up a card and calls that quarantine, and then asks: "Why don't people report quarantinable diseases?" A good many cases are not reported because the family cannot afford to be quarantined. The wage-earner cannot afford to be shut out of the house and be compelled to pay for board some place else. Or, the regulations may be such that he may be shut up in the house and be compelled to stay there and no one in authority visits the family to provide its needs.

This is the most important question, I have found locally, in enforcing quarantine. First, tell your people what quarantine means; second, a demonstration of this idea of quarantine in a humane manner; and when you get your people to understand that that is what you are doing, you will get contagious disease reported. Physicians will not report cases, because they say: "I know the poor devil couldn't afford it; and I would rather call it a strawberry rash; it is mild, and does not amount to anything anyway." If the authorities are properly caring for those quarantined, the physician will report his cases.

We have not been treating them just right, in some localities, and when we stop mistreating the unfortunate citizen we shall not have much trouble about getting reports. Then also our knowledge is so indefinite. We know so little about these diseases; and we have been guessing so much. In Indiana, we asked the state board of health last year to make a uniform quarantine regulation; and now we are sorry we did it, because they went to work and made a minimum quarantine on scarlet fever of twenty-one days, and there are a few towns maintaining a quarantine of six weeks, which I do not think long enough for an arbitrary time limit; and we have neighbors around us that quarantine the minimum of twenty-one. We are reaping the benefits from their short quarantine by their citizens visiting friends in our city immediately after release from quarantine and communicating the disease to the citizens of our city. Quarantine regulations should be the same in all counties, in all states and in all nations.

MR. LEGRAND POWERS, Washington, D. C.: One of my youngest children was taken sick on a Saturday morning. Scarlet fever was not suspected; by Monday the child was fairly well and went back to school. A week later another child was taken sick and we sent for the doctor, who pronounced that second case a case of scarlet fever; by that time the first child was beginning to show signs of having had the disease the week before.

We must recognize the fact that there are multitudes of cases among the less educated that correspond to this case among the fairly well educated family. In some way or other, through our board of health, we must carry home to the average family the knowledge that they could detect these hidden cases and so do their part as citizens in lessening the spread of contagion.

DR. CREIGHTON WELLMAN, New Orleans: It seems to me that a principle which should be recognized in a discussion of this question is that when a disease is to be considered as reported, all suspicious cases of this disease should be reported to the local board of health. A following out of this simple principle will answer many of the objections which have been brought against the thesis presented by Dr. Cohen. In New Orleans, the board of health has a requirement that unreportable diseases and all suspicious cases should be reported along with the actually diagnosed cases; and the physician or the family may call on the board of health to aid in the decision as to whether the given disease which is evidently suspicious is really to be classified as a reportable disease or not.

DR. PAULINE M. TOWNSEND-HANSON, Marshalltown, Iowa: One of the physicians spoke of educating the mothers, by giving literature to the mother who had sick children. The woman who has sick children has no time to read literature—unless possibly in regard to the care of the child—certainly not in regard to the importance of reporting the disease. Most women who have the care of families and households, even though there is no sickness to hinder them will take time to read how to make clothes and to cook and to perform other household duties, but will seldom take time to read dry literature on medical subjects. The mother has not time, unless she belongs to the privileged few of the wealthy class; she has not been trained to an interest in scientific, let alone dry medical, subjects. Comparatively few young American women have the limited amount of scientific education given in our high schools; many of those among the poorer classes, in which more sickness exists because of insanitary conditions, have never even passed through grammar grades, cannot read articles that contain simple medical words. In some talks that I have given to these women I have been simply amazed to find, among those considered fairly educated,

almost absolute ignorance of simple medical terms. People will listen to a talk, whereas they will not read the same thing in printed form; when they do not understand they are so reticent they will not ask someone what this or that word means, because they do not want to show their ignorance. Women who will go to the medical talk are but a very small percentage of the women who have to deal with sick ones. Medical education must be developed long before women have the hindrances of household cares; it must be done in the school-room, when the woman is yet a child. We must devise some method of increasing the scientific knowledge given to children through the public schools on health subjects. In addition, it ought to be possible to educate the public by having public health exhibits in our county and state fairs throughout the United States. In Iowa we have baby health contests at the state fair and various county fairs. This interests the public, and the newspapers are glad to give it a great deal of prominence. In the county that I come from, the county fair board has created a public health division, with a superintendent, on the same footing exactly as the other divisions of the county fair. In this division we will have a baby health contest. There will be three classes of competitors and three first prizes. The prize, $10, is higher than that for the hog, cattle or the horse.

DR. ARTHUR R. REYNOLDS, Chicago: We have given voice to one sentiment here that I want to commend: that is, the hope that contagious diseases will some day be eradicated. It is going to be difficult to accomplish, but that is what we are here for. If any one doubts, let him look back over the mortality list for contagious diseases in the last twenty years. They are diminishing everywhere. Just where the vanishing-point will be I cannot tell.

MR. W. A. HOWE, Albany, N. Y.: As in many other states, in New York we publish various leaflets of instruction on several communicable diseases. These are published in sets, one intended for circulation among health officers and physicians, the other to be used among families afflicted with these diseases. We likewise have individual cards on which to report the various communicable diseases and during the past year in certain sections of the state we have been sending to the various physicians a package containing such leaflets as are published by our department, together with several complete sets of cards on which to report communicable diseases, as well as other literature bearing on public health. At the same time, a personal letter has been addressed to the physicians advising them of material being sent and urging their cooperation in our endeavor to secure complete registration of all communicable diseases, as well as of births and deaths. In this letter the commissioner has urged the physicians to place in the hands of every family in which a communicable disease exists literature relative thereto with a view of informing such families of the true character of such disease and the necessity of complying strictly with certain rules and regulations so necessary for their control. This plan, where tried, has proved very satisfactory, and Commissioner Porter is seriously considering the advisability of extending its application throughout the state.

DR. M. SOLIS-COHEN, Philadelphia: The speaker who said that these diseases should be reported, not through the neighbors, but through the family physician, failed to explain how this could be done in cases of persons having no physician, which represents probably nine-tenths of the minor and one-half of the major contagious diseases; and how that would help where the physician will not report the case, especially if he is kind-hearted and thinks the family cannot afford to be kept home and so pronounces scarlet fever, "strawberry rash," and allows the patient to go about spreading the disease throughout the neighborhood. Did another speaker mean to leave literature at the houses in which there are unreported cases? How shall we know where such houses are? Most boards of health leave literature where cases are reported.

The best place to educate the people is in the newspapers, as practiced by Dr. Evans in Chicago and Dr. Neff in Philadelphia. The American people read the newspapers and look eagerly for these health articles. A person complained to me of a rule of which he was in ignorance, saying that he read the papers faithfully and failed to see any reference to it. The people can also be educated by lectures at county fairs and in school buildings. There are plenty of ways to teach them how important it is that all cases of contagious diseases should be known. As soon as they realize that it is their children who are saved by such methods, I think they will be willing to help. There are many ways in which contagious diseases can be discovered. When a child has been absent from school it is very easy to examine him on his return and see if his hands are peeling, and, if he has had a sore throat, to take a culture. It is possible to have a rule that all sore throats must be cultured. The laity usually knows when there are sore throats about. Even when you educate the people there will always be some who are unteachable, or vicious, or who are unwilling or who feel they cannot afford to be subjected to restrictions. These will not report their cases, no matter how much we teach them; and unless we have some other way, through their neighbors or through the school authorities, we shall never hear of their cases. When the laity are taught that peeling hands probably means scarlet fever and that rashes and sore throats may indicate a mild form of a very serious disease, they will be willing, I believe, to bring such cases to the attention of the health authorities.

PATHOLOGIC STUDY OF A CASE OF ACUTE POLIOMYELITIS *

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I wish to present this short discussion with photomicrographs to make record of two distinctive findings in a case of acute poliomyelitis. One of these in particular is the demonstration of all coats of smaller arteries involved in the inflammatory infiltration, and the other an illustration of a hydrops of an anterior horn cell. The case will be outlined briefly, the salient positive facts being stated, and a discussion of the pathologic points that seem striking made more in detail.

The patient furnishing the material for this study was never seen clinically by me. I was asked by Dr. Frank Hall to participate with Dr. Castle at the autopsy and was given charge of the brain and spinal cord.

The patient was a male, aged 19, who died on the sixth day of the illness. The case was initiated with fever and pains in the back of the neck and along the spine. The first evidence of motor paralysis appeared on the third day. The palsy advanced progressively to the lower extremities, left arm, and neck muscles. Finally inability to swallow, partial aphasia and contracted pupils were observed. Death occurred from respiratory failure with paralysis of the diaphragm. The symptomatology and course were characteristic of a severe *foudroyant* case of acute poliomyelitis.

The morbid anatomic study is confined to the brain and spinal cord, consent for an autopsy having limited us to those organs.

Macroscopically the dura appeared normal. The pia and arachnoid presented some edema in plaques over both the cord and the encephalon. A number of congested hyperemic areas were observed over the entire brain, the left hemisphere more than the right. Probably some excess of cerebrospinal fluid existed. Sections through the brain showed nothing abnormal. Cut surfaces from the brain-stem showed some hyperemia, especially in the medulla and pons, but no hemorrhages.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

There were undoubtedly edema and hyperemia in the cord segments, most severe in the cervical and lumbar enlargements.

For microscopic studies I have used the hematoxylin-fuchsin-picric acid and Nissl stained sections. All the segments of the spinal cord and blocks from the medulla, pons, mesencephalon, thalamus and cortical regions were sectioned, and stained preparations made.

The inner meninges over the entire spinal cord showed a round-cell infiltration, which was more or less spotted, much of the pia being entirely free, especially over the dorsal aspect. The meningeal involvement over the medulla, pons and mesencephalon was similar to that of the cord. The degree was less over the hemispheres where the walls of the vessels were comparatively less involved, the larger arteries being entirely free.

An examination of the different spinal cord segments for infiltrations showed an extensive involvement, the gray substance and particularly the anterior horns being especially attacked. All segments showed a marked involvement of the anterior commissural artery. The infiltration in the medulla, pons and mesencephalon is similar to that in the cord, but possibly more acute, especially in the medulla. It is greater in the nuclear regions. I found no areas in the cortex involved. In a few places mild infiltration was observed in the pial projections, but exactly delimited.

Fig. 1.—Round-cell infiltration of an arteriole.

Fig. 2.—Edema of an anterior horn motor nerve cell.

The vascular tunics involved will be considered now. The larger number of capillaries showed much infiltration of the thin walls and in the immediately surrounding areolar tissue. The veins, especially the smaller ones, showed the greatest amount of infiltration. Many of the veins had all the coats involved, others only the adventitia. The perivascular soft structures were involved heavily as a rule. Some vein walls seemed to be almost disintegrated by the massive invasion of uninuclear cells.

In the arteries a somewhat different invasion was observed. The very largest ones, particularly those of the pia, presented no pathologic changes, the adventitia being quite free. In the surrounding connective tissue, however, a cellular invasion was observed frequently. A number of small arteries or arterioles were found that presented pathologic changes with a round-cell invasion not only in the adventitia but also in the media and intima. In many the invading cells were seen only in a fraction of the vascular wall, a portion of neighboring intima and media being free. I have selected one of these for the photomicrographic reproduction (Fig. 1), which is a smaller arteriole from the white substance of the medulla at the level of the decussation. It shows the perivascular space quite free from cells, the perivascular tissue heavily invaded with round cells, most of the adventitia involved, a circumferential portion of the media showing an infiltration, and a smaller part of the intima having a few invading round cells.

At this point I might discuss briefly a few prevailing ideas of the vascular infiltrations in acute poliomyelitis and, possibly, some of the misconceptions. It has been suggested that the vascular and perivascular cellular invasion might be a post-mortem state. I do not take much stock in such a belief and do not deem it pertinent for a discussion here. Wickman[1] of Stockholm gives a brief but good account of the vascular infiltration, but states that the intima and media are not involved. Harbitz and Scheel[2] give the location of the infiltration first and foremost in the adventitial lymph-spaces, veins and capillaries more than arteries, and say nothing about muscularis, elastica and intima. Strauss[3] mentions the importance of adventitial and perivascular infiltration but says nothing about muscularis, elastica or intima. I quote from Flexner:[4] "The infiltration is within the adventitial coat, while the muscularis coat and the intima remain intact, although the lumina of the vessels are often encroached on through compression."

The nerve-cell degenerations, as shown in the Nissl stained specimens, were of an extreme degree in all the segments of the spinal cord. Only a very few of the anterior horn cells remained and all these showed chromatolysis. In lesser degree were Clark's column cells

1. Wickman: Studien über Poliomyelitis acuta, Berlin, 1905, p. 186.
2. Harbitz and Scheel: Pathologisch-anatomische Untersuchungen über akute Poliomyelitis u. verwandte Krankheiten, Christiania, 1907, p. 115.
3. Strauss: Epidemic Poliomyelitis; Report of the Collective Investigation Committee on the New York Epidemic of 1907, New York, 1910, p. 81.
4. Flexner: The Contribution of Experimental to Human Poliomyelitis, THE JOURNAL A. M. A., Sept. 24, 1910, p. 1107.

and posterior horns involved. Various types of tigrolysis were observed in the nerve cells of the motor centers in the medulla and pons. My second photomicrograph (Fig. 2) shows two motor cells with hydrops. Almost complete axonal degeneration, complete tigrolysis and nuclear displacement to the periphery are illustrated. The larger cell, which is much swollen, shows distinctly the nucleus with the nucleolus displaced from the center to the extreme periphery. In addition there is a darkly stained smaller body within the nucleus beside the nucleolus. This may be an invading body or a nuclear extrusion product.

CONCLUSIONS

The vascular nature in the pathology of acute poliomyelitis in its attack on the central nervous system is now quite generally appreciated. Perhaps the same may be said about the infiltrations of the pia and arachnoid with their septal projections and the anterior commissural vessels of the spinal cord, and the much greater attack on the entire anterior horn substance as well as particularly its blood-vessels. I agree with several other workers regarding an absence of inflammatory involvement of the perivascular spaces. The literature is silent, vague or incorrect about the more minute anatomic localization of invading round cells or inflammatory cells. The perivascular tissue, which must not be confused with the adventitia, comes first in the frequency and severity of pathologic changes. The adventitia is a worthy second and its cells and fibers may be completely disintegrated by the thick invasion of cells. All coats of the veins are frequently involved. The large arteries have invaded only their perivascular structures, the moderate-sized ones the adventitia also; and the small arteries or arterioles may have an infiltration of intima, elastica and muscularis as well as the frequently involved adventitia. It is possible that some of these severely involved vessels have necrosing tunics with resulting thromboses or ruptures of the walls. I believe that the infiltrating cells give us evidence of a defensive process, and all indicates the particular quantitative localization of the virus of acute poliomyelitis in the tissues.

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ABSTRACT OF DISCUSSION

DR. E. E. SOUTHARD, Cambridge, Mass.: The question of the atrium of infection in poliomyelitis is separate from that of the principal site or sites of lesion. Whether the pia mater or the central gray matter is the region in which the virus first exerts effect is not necessarily shown by the distribution of exudate. Experimental work indicates that the same virus may produce disease of different type in different animals of an inoculation series. Thus, whereas the majority of experimental animals exhibit the characteristic focal spinal cord hemorrhage with lymphocytosis, a few may show little but meningitis and yet their tissues on inoculation transmit the now usual form of the disease.

In some material of Lucas and Osgood, the late Dr. E. W. Moores and I found nothing but peripheral neuritis of the Gombault-Stransky type in a monkey whose tissues on inoculation transmitted the more usual form of hemorrhagic and lymphocytic poliomyelitis. The occurrence of a true peripheral neuritic form of poliomyelitis may therefore be suspected to occur in man—a form distinct from the results of wallerian degeneration so common in destructive anterior horn lesions and distinct from the neuritic form (Wickman) of poliomyelitis. For there, according to Wickman, we have the simulation of the neuritis due to characteristic distribution of exudate in the spinal cord, possibly, as the later writers have insisted, in the posterior roots, or even in the posterior root ganglia, but distinct from infiltration and secondary degeneration. There may be, we thought as a result of this work on the monkey material, a form of neuritis of the Gombault-Stransky type in poliomyelitis. Further clinical work may differentiate such cases from the more ordinary forms.

DR. S. LEOPOLD, Philadelphia: I wish to call attention to a case seen with Dr. Pittfield which is rather interesting, because it was one of the neuritic type of poliomyelitis of Wickman. This case is the only one on record, so far as I am aware, in which the opportunity occurred of studying the peripheral nerves. The case presented the ordinary type of poliomyelitis with acute onset, paralysis of the lower limbs, which, however, was unsymmetrical, and tenderness over the nerve-trunks, during the entire period of illness, lasting two months; the knee-jerks were lost, and there was bladder disturbance. The case had been diagnosed as multiple neuritis.

At necropsy I found a true picture of the reparative stage of poliomyelitis, but I found the curious fact that the peripheral nerve, which was examined and placed in osmic acid immediately at necropsy, showed practically no degeneration that could account for the tenderness, while the spinal cord showed an intense meningitis; most significant was the involvement of the posterior roots, the exudate being in the posterior root. The congestion of the vessels was intense; and I believe that the tenderness over the nerve-trunks was of central origin. The case is rather unique in the history of poliomyelitis.

A SIMPLE OPERATION FOR REPAIR OF THE FEMALE PERINEUM, BASED ON THE ANATOMY OF THE PARTS *

WALTER B. DORSETT, M.D.
ST. LOUIS

"The female perineum includes all those structures which fill the outlet of the pelvis." This seems to be a sweeping definition, but such it is according to Deaver.[1] Speaking in the broad sense, this may be admitted to be true. Still, when we consider the repair of injuries due to traumatisms incident to labor, we speak of the perineum in a more restricted sense. In considering it from the view point ordinarily taken, we confine our attentions rather to injuries involving the structures anterior to the posterior margin of the anus, the exception to this rule being the consideration of tears extending beyond this orifice or encircling the lower end of the rectum or the backward splitting of the coccygeal ligament.

In presenting a description of this operation I am aware of the fact that the literature is teeming with descriptions of many operations which in the hands of those who first brought them forward have yielded good results. It is my belief, however, that in the consideration of the subject of lacerations of the pelvic floor, too little attention has been paid to the complex anatomic structure of the perineum, and as a consequence structures unlike in composition and function are coaptated and a perineum is produced that does not functionate in the manner intended by Nature. The loss of tissue due to denudation, the excision of scar-tissue and the union of unlike tissues are apt to result in haphazard union.

In the presentation of this paper I wish to make the broad statement that the word "denudation" should not

* Read in the Section on Obstetrics and Gynecology of the American Medical Association, at its Sixty-Third Annual Session, held at Atlantic City, June, 1912.

* From the Department of Obstetrics and Gynecology, St. Louis University School of Medicine.

1. Deaver: Surgical Anatomy, II, 655.

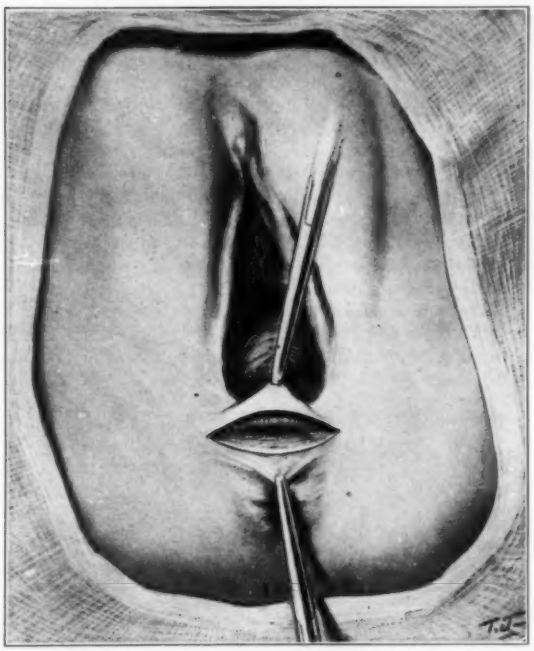

Fig. 1.—Short transverse incision made between two pairs of forceps, one placed at vaginal mucocutaneous junction, the other grasping the skin about one inch from anal margin.

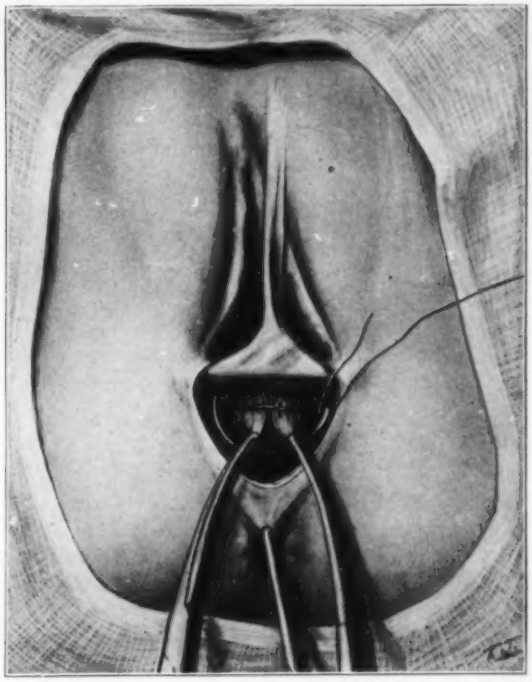

Fig. 3.—Two pairs of curved Mayo forceps grasp edges of levator ani muscles and one suture has been placed. A second stitch is being taken.

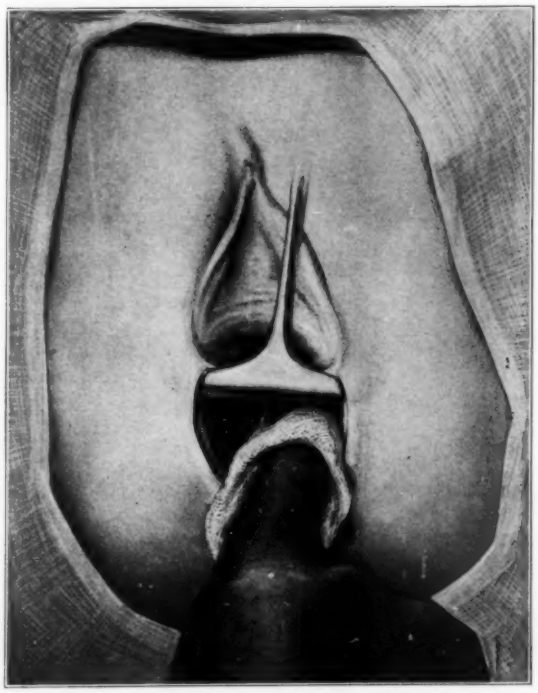

Fig. 2.—"T" forceps grasping upper lip of incision; the gauze-covered finger dissecting vagina from rectum.

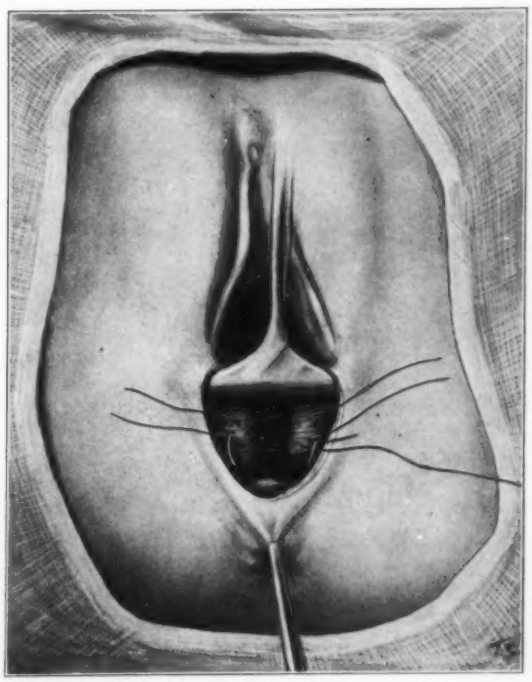

Fig. 4.—The three stitches approximate the superficial fascia and transverse perinei muscles. The upper two are in place; the third stitch also includes a small portion of the levator ani muscle.

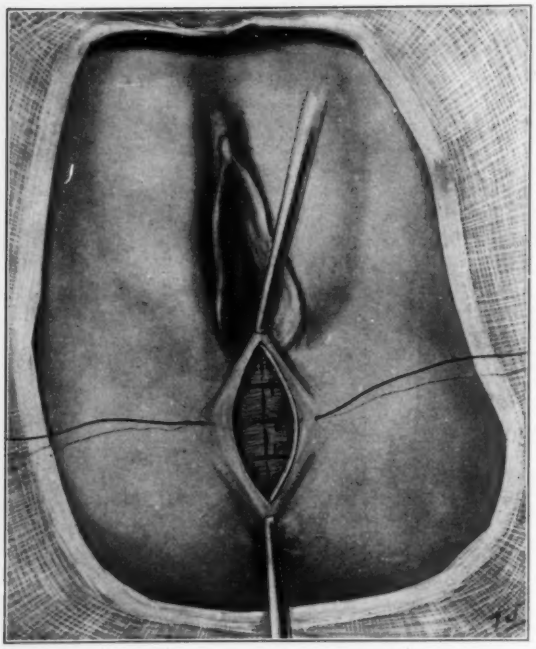

Fig. 5.—Sutures shown in Figure 4 tied and a heavy silkworm-gut ligature passed from one end of the initial transverse incision to the other to close dead spaces. The transverse incision is transformed into a longitudinal incision.

be used in the consideration of the subject for the reason that, when ordinarily used, it means the excision of the vaginal wall and deeper structures. For the same reason I dislike the use of the word "excision" when applied to the removal of scar-tissue. The excision of scar-tissue results only in the formation of new scar-tissue. It is true that irregular and ragged scars may be modified and rendered less irregular and less jagged by excision; still, when practiced, the union is more or less haphazard.

Dissection, to my mind, seems to express the procedure to be adopted. The limitation of this procedure should be carried out only so far as it will enable the operator to grasp and unite torn structures in a manner looking toward a restoration of function. This should be carried out with the same care as a dissection, preliminary to the union of structures, in any hernia. Its intent, then, is to enable the surgeon to approach the several structures and unite them in accord with their anatomic conformation and function.

The simple operation I here submit does not contemplate the loss of any tissue by denudation and is along anatomic lines; the initial incision is only long enough

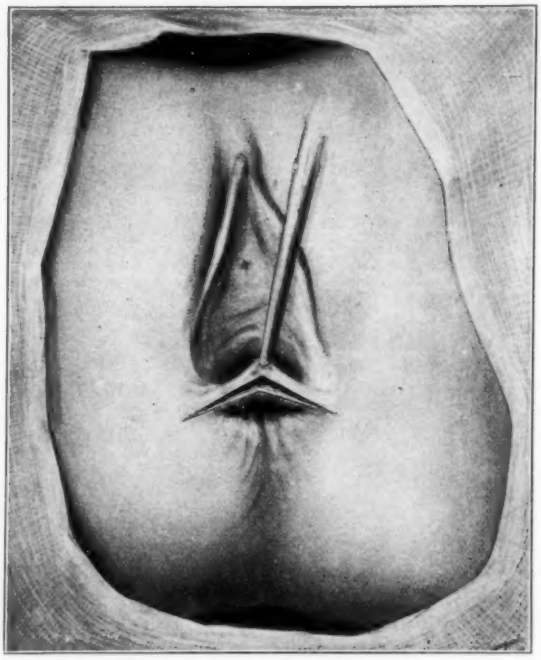

Fig. 7.—Manner of making incision in complete rupture of perineum.

to bring into coaptation the levator ani muscle, the fascia and the transverse perinei muscles, and does not contemplate in any sense the dissection of scar-tissue. It may be described in the following manner: After a thorough preparation, the patient is placed in the dorsal lithotomy position. The forceps is made to grasp the mucocutaneous line (Fig. 1) and another forceps placed a short distance lower, when a knife is carried from left to right making a transverse incision about 1⅛ inches long. The vagina is then dissected from the rectum with the index finger covered with gauze. As soon as the dissection is carried up far enough, the upper forceps is removed and a small pair of T forceps is applied (Fig. 2) to hold upward the superior flap. The dissection is continued upward to the upper border of the bifurcation of the levator ani muscle to the point where it grasps the vagina. The inner border is then caught by a curved Mayo forceps on the operator's right

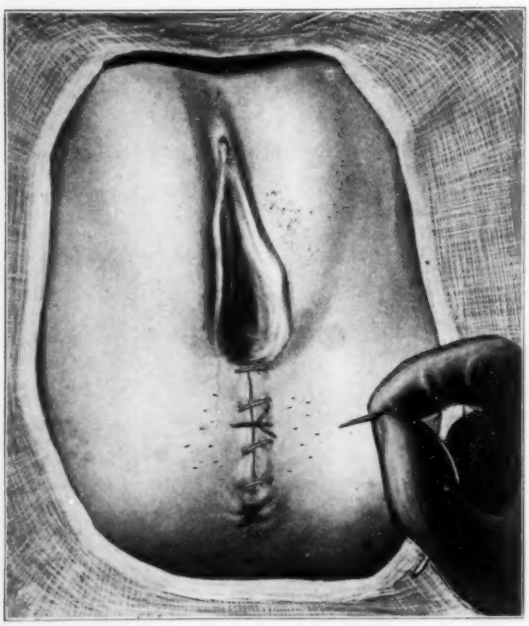

Fig. 6.—Skin wound closed and skin punctured to favor escape of serum.

side; the same is done on the other side, and the two united with a No. 2 chromicized catgut ligature and tied (Fig. 3). Another suture is placed in the same manner one-fourth inch lower and likewise tied. As soon as the forceps are removed the now united muscle slides upward and often out of sight. Two sutures are all that is needed in most cases to unite the levator ani muscle. No effort is made to dissect off the overlying fascia from the levator for the reason that the fascia, and not muscle, is the most important tissue in the healing of all wounds.

The next step is to secure by suture the more superficial structures, which are the superficial fascia and transverse perinei muscles. This is done by the application of three sutures, of which the last or most posteriorly located grasps a small portion of the sphincter ani muscle (Fig. 4). The skin is then united by plain catgut, so that the wound now is one along the central raphe in direction, and has its long axis in exactly the opposite direction from its initial direction (Fig. 5). At a point which corresponds to the ends of the initial transverse incision, a large perineal needle is introduced. It carries a heavy silkworm-gut ligature through the deeper structures to close all dead spaces, and emerges on the corresponding opposite side. Small punctures are now made in the skin contiguous to the incision, for the

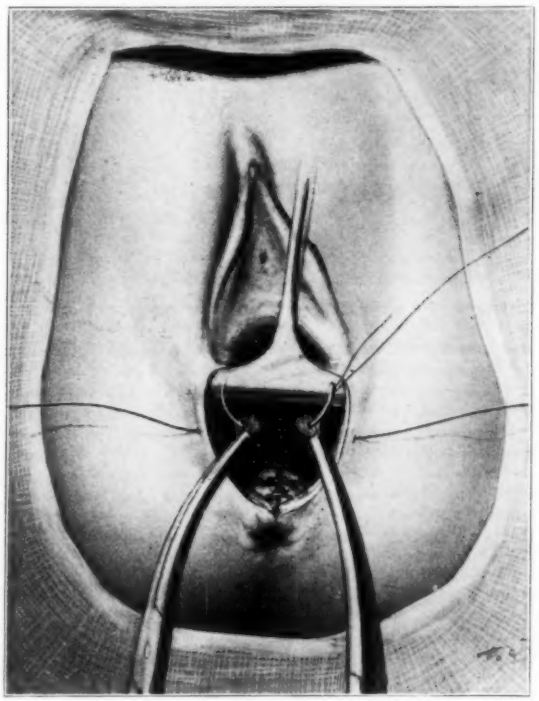

Fig. 8.—Rectum sutured with catgut and first stitch taken in levator ani muscle. The silkworm ligature shown in Figure 5 is also in place.

ready escape of serum and to avoid extravasation. In theory this might be thought to be unnecessary and even ill advised, but experience shows it is beneficial rather than baneful (Fig. 6).

The advantages of this operation are:

1. No loss of tissue.
2. No formation of hard scar-tissue.
3. No danger of soiling the wound, as it is unnecessary even to touch with either finger or instrument the interior of vagina or rectum.
4. The rapidity of execution.
5. The union of like structures and not haphazard union of tissues unlike in structure and function.
6. No effort is made even in irregular cicatrices due to irregular tears to remove them, but only to divide them at right angles, and to draw together and interpose between their upper and lower segments retracted fascia and muscle. Thus is produced a more natural and better functionating perineum.

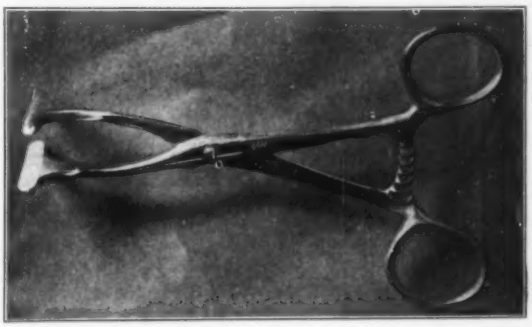

Fig. 9.—"T" forceps used to elevate upper margin of incision.

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ABSTRACT OF DISCUSSION

DR. E. J. ILL, Newark, N. J.: The operation suggested by Dr. Dorsett is the natural outcome of what we have heard twenty-five or more years ago from Tait, Saenger and others. They have advised the flap-splitting operation. There are one or two objections to the operation as practiced by Dr. Dorsett. It is right that we should know what has gone in the past. When Jenks and Saenger first described this operation I performed it a great many times. When later it was suggested to stitch up the muscle separately I did it in conjunction with this operation. One result of that procedure was that in cases in which there was a large amount of vaginal mucous membrane, a subinvolution of the vagina occurred. We have therefore gradually come back to what Emmet described years and years ago, and there is probably no better operation so far as I know. At the same time, Dr. Dorsett deserves the greatest amount of credit for again bringing this matter before us, and no doubt his results have been excellent, for he has done it for a long time. A great many failures of the complete perineorrhaphy are due to the fact that sutures have been introduced into the mucosa of the rectum.

DR. CHARLES P. NOBLE, Philadelphia: It is my judgment that the profession has been at sea on perineal injuries, owing to the fact that the anatomists are all wrong so far as the female perineum is concerned, and the reason is that the description is that of the male perineum.

DR. J. B. DELEE, Chicago: I disagree with Dr. Dorsett when he says that his operation is an anatomic operation and that it restores the anatomy of the parts. The levator ani does not go between the vagina and the rectum. It goes behind the rectum, and the amount of muscular tissue between the vagina and rectum is practically negligible. To prove this put a catheter in the rectum and make a vaginal examination. Ask the woman to contract the levator ani and you will notice that the catheter and the finger are crowded up against the pubis, and that the amount of tissue between the catheter and the finger is not more than a quarter of an inch. Therefore, any operation for the repair of a torn or overstretched levator ani must be done behind the rectum. Such an operation is not a

simple one, and probably the reasons for doing it are not sufficiently strong. We get good enough results with the operation which Dr. Dorsett has shown.

An operation to unite the torn levator ani anatomically may be performed by making a transverse incision between the coccyx and anus, cutting the anococcygeal ligament, reflecting it forward, then by blunt dissection in the ischiorectal fossa exposing the levator ani about the region of the distribution of the fourth sacral nerve. A suture placed here and on the opposite side will draw the muscle together behind the rectum and pull the rectum and anus upward toward the pubis where they belong. I have done it on the cadaver and there it works beautifully.

DR. A. GOLDSPOHN, Chicago: This cardinal feature, of dealing with the levator ani muscle and pelvic fascia is the thing for which I have fought during the last twelve years, as will be seen in the June number of the *American Journal of Obstetrics* of 1901, and in the journal named *Medicine* several years earlier, in an article entitled in both instances "Infravaginal Intrapelvic Perineorrhaphy Without Loss of Tissue." The operation I do is substantially the same as that done by Dr. Dorsett, except that I prefer, instead of catching hold of the levator ani muscle with forceps and drawing it down into the median line and then suturing it, to hook into the levator ani, after I have traced with a finger where it and the pelvic fascia lie, with a needle in a holder. I can tell by the pull that I have hold of the right thing. I do that on both sides and unite them. I do not depend on one suture, but place two or three near each other in this the most important part of the procedure.

So far as the operation for complete tear is concerned, Dr. Dorsett has omitted the most important device for closing the sphincter that has been contributed in recent years, first by a German gynecologist and then by Howard Kelly, a couple of years afterward, and it has since then been practiced more generally. It consists in making an inverted V-shaped incision in the superficial surface of the rectovaginal septum, about half an inch above the border of the torn rectum, then carefully dissecting that down as a flap to the border of the rectum, so that you have a membranous curtain of half an inch in width covering the torn anus; and above that you unite the structures by transverse sutures which are protected from contact with the bowel lumen, which cannot be brought about in any other way.

DR. W. B. DORSETT, St. Louis: I was demonstrator of anatomy for five years and I believe I can claim a knowledge of anatomy. I have dissected a great many perinei very carefully, and at the hospital where I was chief surgeon for a number of years I made a special study of this subject. It may be that the anatomy of the women of St. Louis is not the anatomy of the women of Chicago. I did not say in the description of this operation that the levator ani muscle fibers pass around the vagina. We know that the levator ani is a sling in which the vagina and the rectum hang. They come together. These muscle fibers run in the same direction from the coccyx upward into the ramis of the pubis. They come together between the rectum and the vagina. This operation contemplates the union of the split that takes place. To prove that those muscle fibers are continuous place the finger in the rupture of the perineum and you can press out that muscle very plainly. The muscle fiber never tears but splits. You can tell in every case just where this has occurred. Simply take hold of the vagina with the index-finger, pull it downward toward the rectum and you can tell on each side where the tear is by the scar.

Automobile Blaze From Headlight Lens.—An unusual incident is reported from Germany. A motorist stopped and opened the bonnet to attend to a leaky carbureter, when he was surprised to see it take fire. He extinguished the blaze and in perplexity sought the cause. The road was deserted. There was no fire near or in the car; there was no broken insulation. Finally he discovered that the convex lens of the headlight cover had swung around and acted as a burning-glass, focusing the sun's rays on the oily carbureter. This incident is not mentioned as a warning, for such an occurrence is a remote possibility; but it is interesting.

NEGATIVE AIR-PRESSURE IN ACCESSORY SINUS DISEASE

SIMPLE APPARATUS USED IN FRONTAL SINUS EMPYEMA, WITH REPORT OF A CASE

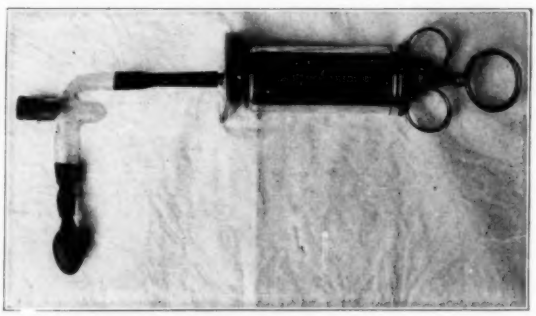
WILLIAM HIBBS TOMLINSON, M.D.

Assistant, Ear Department, Polyclinic Hospital; Throat, Nose and Ear Department, Pennsylvania Hospital; Chief Clinical Assistant, Nose, Throat and Ear Department, Samaritan Hospital

PHILADELPHIA

Patient.—Mr. J. H. S., aged 40, teacher, presented himself in January, 1911, complaining of severe pain in the right eye and the frontal region. The history was that of nasal discharge with some obstruction to breathing for a number of years, with treatment for "catarrh" at various times. Nasal examination showed pus in the right middle meatus, with polypi obstructing the infundibulum.

Treatment and Course of Disease.—Removal of the polypi and the anterior end of the middle turbinate gave good drainage and relief from the pain. Treatment by applications of contracting solutions followed by argyrol was carried out over a period of several weeks but a slight mucopurulent discharge persisted. Attempts to enter the sinus for purposes of irrigation were not successful. The summer of 1911 was passed with no nasal treatment and with a slight amount of discomfort only, though a small quantity of nasal discharge



Apparatus for negative air-pressure in accessory sinus disease.

was present. In December, 1911, an acute inflammation involving the whole upper respiratory tract caused an exacerbation of the old sinus trouble, with return of violent frontal headache and pain in the eye. The acute symptoms were relieved by treatment along the lines formerly employed, but a profuse purulent discharge was unchecked and there was occasional headache. No improvement was apparent after several weeks and more radical surgical measures were under consideration when treatment by negative air-pressure was instituted. Daily applications of the apparatus were made, and improvement was apparent from the first. The first few days there was sucked down considerable thick foul-smelling pus, but following this the character of the secretion changed and became thin and scanty, until after three weeks the patient considered himself well and passed from observation.

The outfit as used consists of the glass reservoir of a Smith ear suction apparatus, fitted by rubber tubing at one end with a large nasal piece, and at the other with an ordinary ear syringe. The technic of operation is simple: while the patient holds the nasal piece in the nostril he shuts off the entrance of air into the opposite nostril by his thumb and forefinger, at the same time holding his breath, thus elevating the soft palate. Suction made at this time tends to produce a vacuum and the palate is forcibly held up, respiration proceeding through the mouth. When the suction has been applied as long as is desired air is again allowed to enter the

nostrils. This procedure is repeated a number of times during each sitting.

Treatment of accessory sinus disease by negative air-pressure had its inception in the Bier treatment by hyperemia of inflammations in other parts of the body. It was probably first used by Sonderman,[1] though Muck, Spiess, Brawley, Dabney, Pynchon and others have devised apparatus for its application. That its use has not been general is evidenced by the fact that it is not given as a method of treatment in all of the newer works on rhinology. Phillips,[2] in his recent book, makes no mention of it. E. R. Lewis,[3] in an enthusiastic report of a series of cases treated by this method, directed attention to the difference in the types of hyperemia of Bier, that brought about by constricting bands being in the passive form, with transudation or leakage of serum from the blood-vessels, while that brought about by suction — negative air-pressure — is active with increased cellular activity of the part.

Ballenger, in his latest work,[4] advises the use of negative air-pressure, tentatively, in sinus disease, and states that "the rationale of the method consists chiefly in the increased hyperemia of the mucous membrane lining the cells. The local nutrition is thereby improved, the cell resistance and leukocytosis increased and the infectious process checked." In addition suction cleanses the sinus of retained secretions, and probably does this as effectually as can be done by irrigation; and it must be borne in mind that a considerable proportion of sinuses cannot be entered for irrigation through their normal openings.

That the method deserves more consideration than it has received seems certain. Its use is painless, and devoid of danger of infecting sinuses not already involved, as is possible in treatment by irrigation. It is my contention, therefore, that it should receive a trial, in conjunction with appropriate intranasal surgery — for obstructions to drainage must be removed — in such cases as offer a chance of cure by the intranasal route.

Frontal sinus disease would seem to offer better hope of success than disease of the antrum, because of the location of natural drainage in the frontal sinus at its most dependent part.

Negative air-pressure as a cure-all in sinus disease no one advocates. That it should be tried tentatively, in selected cases, before advising radical external operations, seems justified both by reason and by performance. This trial it seems not generally to have received.

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COMPLICATIONS IN TABES DORSALIS *

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NEW YORK

The complications of tabes are both numerous and varied. They may involve any of the viscera, the nervous system, or the circulatory apparatus; they may extend into the province of the surgeon or the orthopedist. Many organic diseases, as well as many mental conditions, may occur in conjunction with tabes. These facts will seem neither unusual nor strange if one reflects that tabes extends over a long period of time, during the greater part of which it is progressive. Another and more potent reason still is the fact that tabes is specific in etiology. The complications of tabes, numerous and varied as they are, are yet, preeminently, the complications of syphilis.

The most extensive and all-embracing group of complications are the crises. Of all these the one most frequently encountered is the crisis of pain. It occurs in 88 per cent. of the cases. It may involve trunk, limbs or viscera. It may be of rare or frequent occurrence, of long or short duration.

TREATMENT OF CRISES

The treatment is first the application of local measures, such as plunging the leg into hot water, painting with iodin, bandaging, mustard, chloroform liniment, faradization, and ironing with a hot iron; next the administration of the simpler drugs such as aspirin, pyramidon, salipyrin and codein. The cautery will often prove of great value in those attacks of pain involving the trunk.

The tabetic, subject to the crises of pain, should be instructed in the use of simple applications and simple remedies. He should be in a position to find these remedies and at a moment's notice marshal them to his aid. He should persist in trying first one and then another; it is a curious but none the less undeniable fact that what serves as a relief to one attack fails utterly in the next, and vice versa. If the pains still persist or, as they often do, tend to get worse, the patient should go to bed. A tabetic in a crisis of pain needs rest. To allow him to move about restlessly only invites demoralization and wastes energy. The last resort is the hypodermic of morphin. If all else has failed, it is warranted and indicated. It is, however, warranted and indicated only with this proviso—that it be administered by the physician.

The gastric is the next most common crisis. The treatment of the gastric crisis requires more thought, more skill and more common sense. The most serviceable drugs are cerium oxalate in 5-grain doses every half hour, minute doses of strychnin, antipyrin and bicarbonate of soda. Methylene-blue in 1-grain capsules has been suggested. Nitrate of sodium has been advised. Oppenheim speaks of injections of cocain into the epidural and subarachnoid spaces of the spinal canal. Levy and Pope have added to these alcohol and stovain. The different alkaloids of opium can be tried, as dionin and codein. Vallas Cotte has suggested stretching the solar plexus. These latter methods are, however, far too radical. Again the last resort is the hypodermic of morphin—to be administered by the physician only. There is a point in the management of the gastric crisis which deserves a little more consideration than is usually accorded to it. I refer to the intercurrent treatment. These patients should be treated not only during the attacks, but also between the attacks. Here the object should be to increase the nutrition and to add to the general resistance. Every effort should be made to improve the digestion, to induce the patient to eat fat-producing foods, and in every way to prepare him for the next attack. In this way a gastric crisis, when it comes, will do a minimum amount of damage, and leave behind as little destruction and wreckage as is possible. In the management of all crises in tabes, three great factors should never be lost sight of—rest, super-

1. Sonderman: München. med. Wchnschr., Jan. 3, 1905, p. 17.
2. Phillips, Wendell: Diseases of Ear, Nose and Throat.
3. Lewis, E. R.: Arch. Otol., 1908, xxxvii, 471.
4. Ballenger, W. L.: Diseases of Nose, Throat and Ear.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

vision and nutrition. An old maxim but a good one is that a tabetic who is losing weight is losing ground.

Among the surgical measures essayed for the relief of the gastric crises are the operations of gastro-enterostomy, of stretching the solar plexus, and the one known as Förster's operation. The two former have few followers, and can be dismissed from further consideration. The latter consists of a resection of the posterior spinal nerve roots. Thomas and Nichols reported a case two years ago in which the result had proved satisfactory. Rangi of Vienna has recently reported eleven cases in each of which he divided three or four roots. Five of the patients were helped; in five there was no change. There were no deaths. At the April meeting of the German Surgical Society in Berlin, in speaking of the operation, Förster himself reported that there had been 119 known cases in which, as he said, only thirteen had been followed by death.

The operation is a serious one; the contra-indications are thickened arteries and cardiac complications; the proportion of deaths, according to Förster himself, is over 10 per cent. The results have not been all that could be expected. I have had no experience with this operation, but it seems to me that the tabetic is hardly a fit subject for major surgery. It should be kept as a last resort, and then tried only in the most obstinate and serious cases, with the full comprehension of the dangers and the sometimes vain results. Under such circumstances it may be indicated.

VARIOUS COMPLICATIONS

The vesical complications of tabes are those which may be divided into varying degrees of retention and varying degrees of incontinence. The essential point in their treatment, as Squier says, is attention to detail. Any possible source of peripheral irritation must be investigated. Chronic congestion of the prostate and deep urethra must be treated. A congenital tight meatus should receive attention and an old stricture be dilated. A cold sound will often relieve painful spasm of the bladder; if cystitis has already developed, resort must be had to hexamethylenamin and bladder washings. The catheter should be kept away from the tabetic as long as possible. If at last it has to be used the most careful surgical antisepsis must be followed. The hypodermic needle and the catheter are two instruments which every sufferer from tabes should be kept in ignorance of for as long a time as possible.

The importance of the urinary complications can best be illustrated by the fact that they occur in some form in 90 per cent. of the cases of tabes; in 70 per cent. there is residual urine, and almost one-half of the patients suffer from cystitis. Extending up from the bladder there may follow a host of complications involving the ureter, the pelvis of the kidney and the kidney itself. These complications are not only common but are also extremely serious; Gowers, in speaking of the kidney complications, says that "they are the most common, they develop insidiously and manifest themselves only when life is in peril." There has always been a feeling in my mind that in tabes not sufficient attention is given to the care of the urinary tract. In tabes the reaction of the urine is of far more importance than the reaction of the Wassermann test.

Among the unusual complications which appear in tabes are the so-called spontaneous fractures. These, more common in women than in men, generally occur in the long bones and during the ataxic stage of the disease. This is partly due to the fact that these bones are more exposed and more liable to be the seat of injury. Trauma, a dangerous occurrence in tabes, may serve as the starting-point of one of these fractures, of a perforating ulcer, or of an arthropathy. These fractures may result from a muscular strain, as the joints are unduly lax, or from certain pathologic changes which may have occurred in the neighboring joints, rendering the bones unduly sensitive and brittle. These spontaneous fractures generally occur in those long bones which are adjacent to diseased joints. In tabes, therefore, a pathologic joint suggests a pathologic extremity.

These joint conditions are more usual than even the fractures. The cardinal clinical features are the sudden and enormous swelling with neither pain nor tenderness, the rapid progress, and the chronic course. They may vary anywhere from a simple effusion to the classic Charcot joint. The latter occurs in two forms, either the atrophic or the hypertrophic. In the former there is an acute disorganization with an erosion of the cartilages and a wasting of the bony surfaces, while in the latter there is an enlargement of the bony ends and a thickening of the ligaments. In both there is an effusion. The atrophic variety is most apt to be seen in the hip and shoulders, the hypertrophic in the knee and elbow. Any of the joints may be involved; most frequently, however, the larger ones. Gowers and Taylor give the proportions as knee forty-five, hip twenty, shoulder eleven, tarsus eight, elbow five, and ankle four. The jaw and spine rarely may be affected. These joint conditions do not respond well to treatment. The simple effusion tends to absorb; later on, however, it is apt to reappear in a more lasting and virulent type. The tendency of most of the Charcot joints is to go on to a considerable and permanent deformity. Church describes the condition very well when he says that "old tabetic joints present merely a bag of bony fragments."

For the treatment of these conditions many measures have been tried. Counter irritation, puncture and mechanical appliances all have their advocates. The best remedies are rest and mechanical appliances. The one important point to bear in mind is that the earlier the affected joint is relieved from use and pressure the more lasting and more satisfactory will be the results.

It may not be out of place here to speak of a scoliosis occurring in the vertebral column. Certain cases have been reported in which such a scoliosis has been found in the neighborhood of the lumbar vertebræ. From this the deduction has been made that in certain cases such an arthropathy might through mechanical means and pressure give rise either to girdle pains or to pains lower down.

The diagnosis of these vertebral arthropathies is difficult — almost impossible — to make. It has therefore been suggested that in every case of tabes in which there is suffering from attacks of pain there should be taken an *x*-ray picture of the vertebral column. I simply mention this for what it is worth.

A curious complication, and one which is frequently passed over, is the perversion of function of the sympathetic system. The tabetic is pecularily liable to coldness of the extremities and capillary stasis, even going on to the extent of a mild degree of erythromelalgia. Cases have been reported in which the whole body shows a degree of cadaveric lividity. These patients easily get warm when covered in bed and respond too readily and too rapidly to the hot bath.

Many other minor complications affect the extremities and joints, such as rupture of the Achilles tendon and perforating ulcer of the foot. Floating kidney along with tabes has been reported. Its occurrence may be accounted for by the laxness of the ligaments. Several skin conditions are known to complicate tabes, especially those that are herpetic in character. Glycosuria and diabetes should be mentioned as occasional complications.

Among the complications are many organic conditions. Those which may easily be overlooked, but which may have considerable bearing on the immediate future, are the circulatory complications.

Inasmuch as tabes is derived from a specific origin, it is to be expected that the other results of syphilis will accompany it. An insufficiency of the aortic valves, an aneurysm or a general endarteritis is the usual circulatory complication. The heart condition sometimes simply shows an unusual rapidity. These cardiac complications, to my mind, are simply the expected complications which one would be on the lookout for in any specific condition.

To the psychiatrist tabes is interesting. The mental complications are numerous and varied. Meyer has reported the undoubted occurrence of paranoia, of circular insanity, of manic conditions, of simple primary dementia and of dementia præcox in the course of tabes. Starr has spoken of a tabetic who became quite maniacal, only to recover. There can be no question that any of the acute psychoses may occur wholly independent of either the tabes or the specific origin of the tabes. In all of Meyer's cases there was a total absence of any of the cardinal signs which go to distinguish general paresis. There may also be a condition resulting from an active syphilitic exudation, which, by the clinical symptoms of optimism and carelessness, is suggestive of general paresis and yet, quite unlike paresis, yields to mercury and iodid.

General paresis itself may complicate tabes. The two conditions are so similar in origin and in symptoms that it is not an unusual condition to encounter cases which seem at one time to resemble the one and at another the other. It is impossible in these cases to differentiate; it is wisest to defer judgment until the complete picture is presented and then to balance the physical with the mental symptoms. Even the average tabetic, who is having, so far as the mental symptoms are concerned, an uncomplicated and simple course to his disease, is generally admitted to be not quite normal mentally. He is emotional, easily influenced and subject to any and every force with which he comes in contact. He is apt to be optimistic and, fortunately, to look on the steady onward march of his condition with comparative freedom from anxiety. He is unusually susceptible.

It is fairer, then, to assume at the outset that the tabetic is not a normal individual. Kraepelin says that we have a right to assume a psychosis peculiar to tabes. On this point he says: "The distinguishing feature of the tabetic psychosis appears to be an acute hallucinatory excitement, which presents a marked resemblance to the hallucinatory insanity of the alcoholic." The argument which some will make that these cases are not cases of tabes but are incipient cases of general paresis is not a valid one. The autopsy will show distinct lesions of tabes, while the clinical signs, such as defective memory, defective speech or handwriting, will be absent. There will be no facial tremor. If there should still exist doubt, an examination of the cerebrospinal fluid should be made.

A rarely mentioned but by no means unusual complication is morphinism. It is most apt to occur in cases of long standing and in patients who have been victims of some of the crises. It has the usual tendency to destroy the higher powers and to render the patient selfish and difficult to live with. It is especially apt to be found in patients in homes for the incurable and in almshouses. Morphin, while it alleviates the sufferings of the crises, yet adds to its miseries. Except in extreme cases it is to be avoided in tabes as much as, if not more than, in any other disease.

Of greater interest to the neurologist are the complications with the organic nervous diseases, such as paralysis agitans, acute myelitis, lateral sclerosis, general paresis, exophthalmic goiter, hemiplegia and progressive muscular atrophy.

The complication of hemiplegia with tabes is more constant than is generally believed. This is partly due to the fact that the hemiplegia may be transitory or permanent, functional or organic. The mere recognition of the fact that the vast majority of cases of tabes are syphilitic in origin at once suggests the possibility of the occurrence of a transient syphilitic hemiplegia; the acknowledgment of the fact that tabes is a chronic disease and that its sufferers are prone to exhibit a certain psychic degeneration suggests the possibility of the occurrence of a functional paralysis; and finally the very fact that the tabetic is a sufferer from endarteritis suggests the occurrence of hemorrhage and thrombosis, resulting in a hemiplegia.

A rare combination is that of tabes and progressive muscular atrophy. By this I do not mean the ordinary atrophy which is found in many tabetics. Statistics go to show that from 15 to 20 per cent. of all cases of locomotor ataxia give evidence of some degree of atrophy. This atrophy is known as tabetic atrophy, and differs in many respects from the atrophy which is characteristic of the disease known as progressive muscular atrophy. Dr. Collins describes the tabetic atrophy very aptly when he says: "The clinical characteristic features are (1) slow progression; (2) absence of fibrillary twitchings; and (3) absence of reaction of degeneration." To this description Gowers adds yet a fourth point—the occurrence of the atrophy in the muscles of the tongue.

Apart from this tabetic atrophy there do occur cases in which along with the tabes there are to be found the cardinal signs of a progressive muscular atrophy—the presence of fibrillary twitchings, a diminished reaction to both faradism and galvanism and a distribution to the upper rather than the lower extremities. The number of such cases reported is small; it does not exceed ten or fifteen; therefore I feel justified here in mentioning a case of this type which we had under observation for a number of years at the Vanderbilt Clinic.

CASE REPORT

The patient, aged 44, married, and the father of thirteen children, was by occupation a piano-tuner and maker. In childhood he suffered from measles, scarlet fever and diphtheria; later on from pneumonia and a slight attack of blood-poisoning. The question of a specific lesion is not absolutely definite, but it is more than probable that at the age of 28 he did contract syphilis. The illness for which he came to us dated back about six years. He had been exposed to very cold and very stormy weather, following which he had slept in a room without heat. Immediately after this he noticed that he had no longer any control in

his left foot. Then he began to complain of great muscular weakness in the neck, back and arms; the fingers were numb, and he had great difficulty in using his hands for the fine motions. The patient was poorly nourished and markedly emaciated. There was some wasting of the muscles of the right hand and of the right shoulder. The scapulæ were winged. The neck muscles were atrophied, so that the head hung well forward. There was a considerable degree of atrophy of the left hand and arm. Fibrillary twitchings were present over the whole body, but especially in the legs. There was wasting of muscles of the interossei of both hands; the right hypothenar eminence was wasted, and the face showed atrophy. The electric examination displayed a diminished reaction to both faradism and galvanism. In addition to these symptoms of atrophy the patient had Argyll Robertson pupils, lost knee-jerks, the Romberg sign and ataxia in all extremities. He had difficulty in passing urine. As far as his mental symptoms were concerned, he was perfectly clear and quite cognizant of his condition.

Here then was a patient who displayed four of the cardinal signs of tabes dorsalis, and at the same time displayed an atrophy which cannot be classed as being one of the simple tabetic atrophies, but rather an atrophy characteristic of progressive muscular atrophy. Another feature of this patient's condition was that the wasting involved not the legs but the arms, and that it had steadily progressed from the interossei of the hands to the scapular muscles and the face.

In tabes the occurrence of optic nerve atrophy is so common as to deserve mention. It occurs in 5 per cent. of the cases. It is more apt to complicate those cases in which there is already an affection of the eye muscle; it is also a by no means unusual way for the disease to make its first manifestation. A curious but interesting fact in regard to optic nerve atrophy is that it rarely occurs in the ataxic cases. It is true that blind tabetics walk fairly well while ataxic tabetics are those who can see. There is no remedy for the atrophy and it is generally progressive.

I have still left many complications unmentioned; there are those involving the muscles of the eye; there are those involving the cranial nerve; there are the minor digestive disturbances and there are the rectal, the laryngeal and the intestinal crises. It would be quite impossible in a paper of this length and limitations to treat of all. My object has been to consider some of the most important, some of the rarest and some of the most interesting.

54 West Fiftieth Street.

ABSTRACT OF DISCUSSION

DR. L. HARRISON METTLER, Chicago: Dr. Hunt has referred to various conditions as complications of tabes dorsalis, and correctly so according to the older conceptions of this disease. But what is tabes dorsalis but a late form of syphilis with certain prominent localization symptoms? It seems to be the last stage of syphilis. Call it metasyphilis or parasyphilis for clinical purposes, if you like; the fact remains that it is a product of syphilitic infection. It is syphilis that is the disease under discussion and the spinal and cerebral dominance of the clinical manifestations represent merely a stage and localization of this disease process. The complications mentioned by Dr. Hunt are syphilitic manifestations.

If the emphasis is to be laid on syphilis as the essential disease it may be difficult at times to determine whether the so-called complications are really complications of tabes or whether tabes is a complication of these. The question is an important one from the pathologic and therapeutic points of view. It suggests the advancement that neurology is making toward a broader and more scientific conception of disease than that which formerly used mere clinical syndromes and called them diseases, as witness Ménière's disease, Landry's paralysis, and the whole gamut of the headaches. Mere symptomatic medicine is giving way to the more scientific physiopathologic conception of disease.

Lately, we have seen this advance strikingly illustrated in connection with acute anterior poliomyelitis. Up to the present, a more prominent group of clinical localization signs has established our general conception of the disease. We recognize that the pathogenetic process is something far more extensive than a lesion of the anterior horns of the spinal cord. The disease is a particular variety of generalized infection with possible lesions in all parts of the nervous system, as well as in other organs of the body. Acute anterior poliomyelitis is but a phase and a localization of the disease in certain individuals and is therefore not a disease but a mere clinical syndrome. When we shall have discovered the specific germ that gives rise to this form of infantile palsy and named it, we shall, as we have already done with regard to syphilis, tuberculosis, and other specific forms of infection, name the disease after the infection, and cease calling its mere local manifestations disease entities. One is no more justified in speaking of tabes dorsalis and general paresis as distinct and separate diseases than one would be in speaking of tuberculosis of the hip-joint and tuberculosis of the lungs as separate and distinct diseases.

DR. CHARLES K. MILLS, Philadelphia: From my limited experience with crises, especially the gastric crises, I have no doubt that in specially chosen cases the cutting of the posterior roots is one of the most efficient and relatively permanent methods of getting relief. In Philadelphia we do not think that, even in a tabetic, unless the case is greatly advanced, unilateral laminectomy or even a complete laminectomy is a dangerous procedure. I think Dr. Hunt's statement that tabes occurs in different forms of mental disease should have been turned the other way. Tabes occurs not infrequently in those who are potentially the victims of, or are liable by predisposition to, forms of mental disease; and I can see no reason why a dementia præcox patient or a patient with primary dementia in later years, or one with paranoia or one even with a tendency to or history of manic-depressive insanity may not under the impetus of acquired syphilis have general paralysis. Interesting cases of this kind are seen, and, indeed, the hereditary predisposition to the other form of disease in some cases decreases the resistance in such a way as to lead to metasyphilitic disease. An interesting historical instance of general paresis occurring in paranoia was, in my judgment (and it was the judgment of a few others), that of Guiteau. It is of importance for us to be able to group different phenomena of the same etiology. It is a scientific convenience to do this. Tabes and general paresis are perhaps closely allied, if not identical diseases in their pathology, except for the differences in the site of the lesions, but these diseases are not myelitis, encephalitis or meningitis of syphilitic origin. Each of the latter gives a more or less independent clinical entity.

Our friends, the Freudians, seem also desirous to have us abolish the term "diseases" and substitute "complexes." What does it matter? The complexes are simply groupings of psychic or neuropsychic phenomena. Groupings of phenomena constitute diseases in one of the accepted usages of the designation.

DR. C. R. BALL, St. Paul, Minn.: It seems to me that, if we are to regard tabes as a parasyphilitic disease, Dr. Hunt has failed to mention one of the most important complications, that is, syphilis itself; syphilis may and often does complicate tabes, either as a meningitic, gummatous or arteritic process. This, no doubt, helps to explain the somewhat irregular successes which one obtains sometimes in tabes with antisyphilitic treatment. It may help to explain also some of the mental conditions which Dr. Hunt mentions in his paper. I have found salvarsan extremely valuable in two cases in the treatment of shooting pains. In one case, in particular, in which the pain was hard to relieve and resisted the customary

remedies, an intravenous injection of a full dose of salvarsan stopped the pain. I have found it quite effective, if there is considerable pus formation in the bladder and cystitis, to use the combined staphylococcus vaccine or the staphylococcus and colon bacillus combined. In several cases the cystitis has improved greatly under this vaccine therapy.

DR. A. L. SKOOG, Kansas City, Mo.: In the last few years there has been a vast amount of work done in respect to the study of the cerebrospinal fluid. I believe that in nearly all cases of tabes, especially in the earlier stages, a lumbar puncture should be performed. While the majority of the cases in which I perform lumbar puncture have not resulted in any relief from any of the symptoms or from the progress of the disease, yet there have been a few cases in which benefit has been derived from it. A real estate man, aged 56, formerly a locomotive engineer, who denied ever having had specific disease, consulted me especially for severe pains which had been diagnosed as rheumatism by several physicians. The patient had been unable to perform any labor for a period of about two years. His disease had been present for about five years, as far as he knew. He had numerous severe typical crises, and had never received any marked benefit from treatment. He also had a number of classical symptoms of tabes which I will not mention. I performed a lumbar puncture, as I stated to him frankly, largely for diagnostic purposes. I found that the cerebrospinal fluid was under much pressure, and withdrew about 50 c.c. The patient experienced almost immediate relief from his pains, and continued improved for a period of three weeks, improved in his physical condition and gained in weight, having been quite emaciated. He returned to me for another lumbar puncture, because of the relief experienced as the result of the first puncture. A second one was performed during the third week, and again he received marked relief. I again withdrew a large amount of fluid. In brief, I performed five lumbar punctures in the course of two years, since the case has been under my observation, and each time the period of freedom from pain has been longer. It is now about five or six months since the last puncture was performed, and the patient is able to do some light work. He has marked tabetic symptoms, but his reflexes have improved, and there is a slight improvement in the paralysis.

DR. TOM A. WILLIAMS, Washington, D. C.: Before adhering to the classical doctrine that the tabes is essentially different from syphilis, we have to take into account certain considerations as to the establishment of immunity in an individual, and certain considerations concerning the accessibility of syphilitic lesions to remedies, which are set forth by Nichols of the Army and are available to everybody.

In the second place, the constancy of lymphocytosis in tabes is a circumstance against which strong argument must be brought before one denies that the process of tabes is a specific meningitis, and that dorsal tabes is not merely a secondary effect of a luetic radiculitis extending from this, because of the anatomic structure of the spinal roots and their meningeal envelopes.

There may be a degree of central irritation which, though insufficient in itself to cause lightning pains of crises, is capable, when augmented by peripheral excitations, of giving rise to the phenomena which we know as crises. In those cases the removal of peripheral irritation will remove the symptom temporarily. A concrete illustration is a case I saw recently. The patient had been seen by Osler and many eastern neurologists without benefit. The last neurologist in New York gave salvarsan, but the pains grew much worse. It was one of the benign slow cases of tabes. There was a history of syphilis thirty years ago, lightning pains sixteen years ago, no bladder symptoms, loss of knee-jerks and ankle-jerks, no ataxia; Wassermann test positive. Instead of deep pain sensibility being absent, it was vastly increased. I argued, therefore, that there was definite irritation of the nerve, that we might by eliminating other irritants, without attacking the syphilis, which was at the origin of the trouble, relieve the patient; and it proved to be so. I discovered a factor in the case which had not been taken into therapeutic consideration. The patient had been in the habit of taking three drinks a day and five cigars a day all his life. My theory was that the added peripheral irritation from the toxins of these was sufficient to cause the lightning pains. By diminishing the peripheral irritation I thought I could decrease the lightning pains. I began a process of elimination by baths and diet and cut down the alcohol and tobacco, whereupon the pains disappeared, and the man is comparatively well. Hence, even though peripheral measures themselves when applied to the limbs may not interfere with the lightning pains of tabes, yet one must consider other factors than the causal syphilis in planning treatment.

DR. ALBERT E. STERNE, Indianapolis: It is not very remarkable that we should find complicating conditions in a constitutional disease like tabes. We are entirely too prone to limit our conception of the entity of tabes to the nervous system, and that holds similarly true for paresis. Neither the one nor the other is a disease confined to the nervous system, either central or peripheral. The pathology of paresis and the pathology of tabes extend beyond the confines of the central and peripheral nervous systems. We find pathologic changes in many regions of the body outside of the nervous system. Therefore, it is not astonishing that now and again we should find real complicating conditions arising from those organs which are themselves involved. We should look on tabes and paresis as being closely allied as constitutional diseases, and not as diseases merely of the nervous system.

Dr. Hunt alludes to arthropathies and spontaneous fractures as being peculiar to the ataxic stage. My experience in my own research, especially between 1890 and 1892 in the examination of the records at the hospitals of Berlin, shows the arthropathies in the preataxic stage rather than in the ataxic stage, and, moreover, that the arthropathies are in their incidence actually intracapsular fractures. The most trivial exterior traumatisms serve to provoke such fractures. You will some of you recall the case of Madame Corteret, who on being lifted from bed broke her right femur; and, then, while she was being put back to bed the left was fractured. This brittleness of bone is characteristic in tabes, running as high as 10 per cent., perhaps, or at any rate, appreciably high. Neither the arthropathies, the perforating ulcers, nor the various crises are complications. They are essentially tabetic.

I believe the greatest commendation should be given to Dr. Hunt for the reason that he has strongly emphasized the dangers of the hypodermic needle. Physicians are naturally too prone to allow the control of the situation in chronic disease, whether of this type or any other, to get out of their hands; and this they have no right to do, where morphin and other opiates are used.

DR. HUGH T. PATRICK, Chicago: In the therapeutics of the pains of crises or crises of pain, I think I have used one or two things that Dr. Hunt did not mention as he was going through the category. One of these is exceedingly simple and sometimes exceedingly effective; namely, very large and very hot colonic flushings, in the knee-chest position, coincident with rest in bed. I think any crises should be treated first and foremost by rest in bed.

Another thing which is undoubtedly effective in some of the crises of pain is injections of sodium cacodylate into the spinal canal. Many of the members may not know of it. Dr. Heym, of Chicago, first proposed it. I cannot follow Dr. Heym in his various theoretical considerations, but the injection of sodium cacodylate into the spinal canal is very helpful in some cases. One manifestation of tabes which may be considered a complication is the acute exacerbation. In the books we read about acute tabes. I think in the vast majority of cases these are instances of acute exacerbation. In these acute exacerbations generally there is well-marked weakness in the legs. Since spinal puncture has become common, I have found coincident with the exacerbations, increase in the lymphocytosis. For this condition, together with rest in bed which is absolutely essential, I give active mercurial treatment.

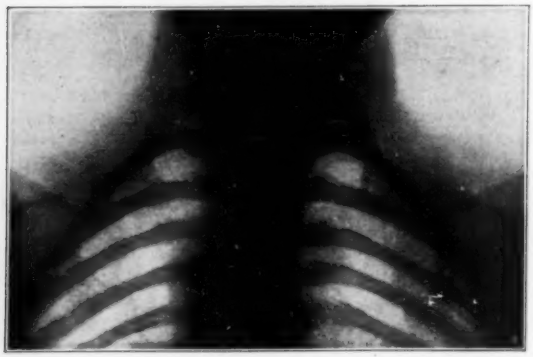
CONGENITAL ABSENCE OF BOTH CLAVICLES

MAX REICHMANN, M.D., CHICAGO

Among the congenital defects the absence of both clavicles is one of the rarest findings. In the available literature, I could find only twenty-two cases recorded in a paper by Hultkranz.[1] According to this author, usually both clavicles are found missing (in only three cases was the defect found to be one-sided) and Hultkranz also states that except in two cases the defect was incomplete.

Through the kindness of Dr. C. R. Forrester, I am able to add another case to the two of complete absence of both clavicles.

The patient, W. M., aged 32, merchant, is of a normally developed family. His father died from an affection of the heart; his mother and one sister are living and, as far as his knowledge goes, do not show any abnormalities in the development of their skeleton. The patient is of small size with well-developed muscles. Neither clavicle can be palpated; in the place of the clavicles, however, one can feel a strong cord. The two shoulders can easily be brought together in the midline of the body. The roentgenologic examination shows a complete absence of both clavicles; the palpable cord must therefore be of fibrous nature. Hultkranz emphasizes the fact that the sternal portion of the bone in these cases is always developed as a rudimentary clavicle having one-third or one-half of the length of the normal bone, while such a rudimentary development of the acromial part is an extremely rare occurrence. My plate, however, did not show any evidence of such rudimentary development. The quite frequent malformation of the skull which Hultkranz found in thirteen of the twenty-two cases mentioned, was also absent in the man examined by me. The coincidence of this malformation with absence of the clavicle is explained by the fact that the ossification of the skull and the clavicle sets in at the same time (second month).



Radiograph showing complete absence of both clavicles.

1606 Mallers Building.

1. Hultkranz, J. Wilhelm: Ueber kongenitalen Schlüsselbeindefect und damit verbundene Schädelanomalien, Anat. Anz., 1899, p. 237.

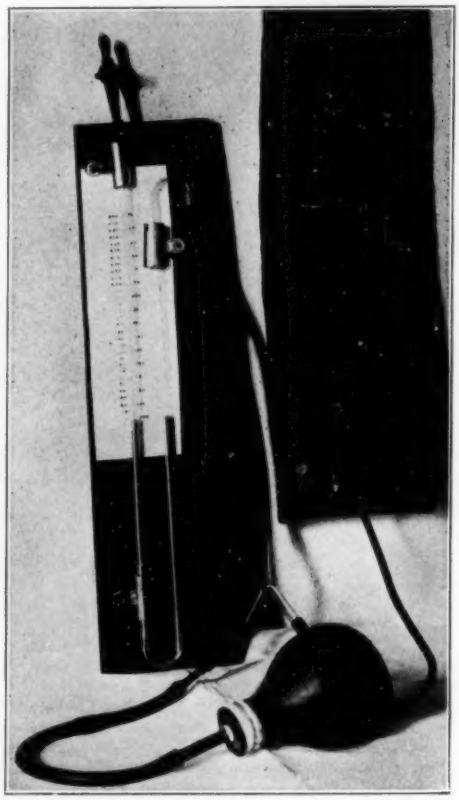
A NEW SPHYGMOMANOMETER

EDWARD J. BROWN, M.D., MINNEAPOLIS

"A new sphygmomanometer" is getting to be almost as much of a joke as a new tonsil-knife or forceps, either of which latter generally means that the man behind the gun is not equal to the instruments previously in use. There is nothing new about the mercury manometer; it is simple enough, and so are the others, whether depending on a column of mercury and compressed air or water and air or a long column of water in a rubber tube, provided they are standardized by comparison with the mercury column. The U tube mercury manometer is better than the straight tube, chiefly because the instrument may be shorter and less cumbersome and also because it is easier to determine the difference of the height in the two arms of the U tube than in the straight tube and the reservoir. Probably, however, the personal elements which attach to the observer are far greater sources of error than those inherent in any kind of manometer.

After using for some time one of those water-bag manometers which require either a very high ceiling or a liberty pole, I did a little experimenting with glass tubing. As a result, I became convinced that any man with even a minimum of mechanical skill might provide himself with a satisfactory and reliable instrument at small expense.

Three feet each of glass and rubber tubing, a piece of board and a few double-pointed tacks are sufficient for the construction of an entirely reliable and satisfactory manometer, altogether costing less than one dollar, the mercury included. An inexpensive cuff and a Politzer bag complete the outfit for office use. If the physician cannot bend the glass tubing his druggist will do it for him in half a minute. The only new thing about my instrument is the escape-valve and perhaps a thousand men have invented it before me. Tie off tightly one end of a soft rubber tube of smaller caliber than the rest of the tubing and 2 or more inches long, and insert a piece of hard rubber tubing 2 or 3 inches long into the other end. Cut a short longitudinal slit in this tube which will admit of the air being freely pumped through from the inside and place this tube inside the larger tube; it will give a very satisfactory release valve, better than the screw-valves, since it is automatic, and if it plays out a new one can be made in five minutes. This valve, with the use of the Politzer bag, affords a method of inflation much superior to the jerky muscular action involved in the use of the double



A new sphygmomanometer.

bulb or any other kind of pump, since the pulse can be accurately gauged while it is being obliterated, as well as on the decline of the mercury column.

Sixteen and 12 inches are convenient lengths for the two arms of the U tube so that 18 or 19 inches is ample length for a case for a portable instrument.

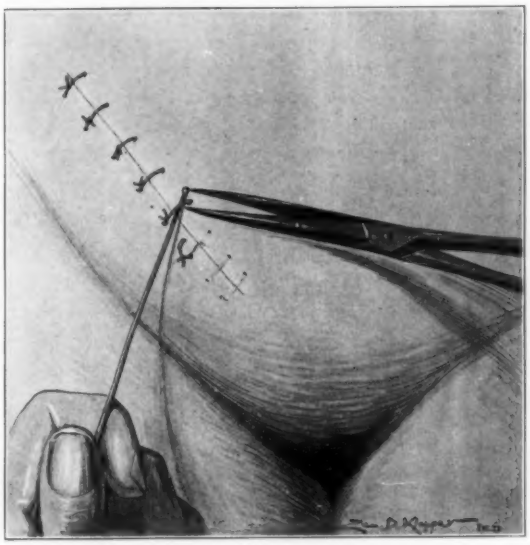
This may not interest physicians who have thousands of dollars a year for the luxuries and elegances of professional life, but it may possibly interest a number of men who earn their income by hard work and are more interested in the support of their families than of instrument-makers.

524 Syndicate Building.

A SUGGESTION FOR REMOVING SUTURES

J. R. PENNINGTON, M.D., CHICAGO

The suggestion I offer may not be new; in any event, I submit it for what it is worth. The illustration is sufficient without description. I find it less painful and more satisfactory than the usual forceps-and-scissor process.



Method for removing sutures.

31 North State Street.

A CLINICAL NOTE ON HYPERHIDROSIS CIRCUMSCRIPTA

RICHARD L. SUTTON, M.D., KANSAS CITY, MO.

Instances of localized hyperhidrosis are rather infrequent, if one is to judge from the published case reports. The etiology is more or less problematic, although, according to the conclusions of Biedl,[1] hyperexcitability of the so-called "sweat fibers" of the peripheral nerves and of the parenchymatous cells of the coil glands plays an important part in the phenomena of excessive sweat production.

The following case of hyperhidrosis is of interest chiefly because of the location and slight extent of the area involved, the early, or possibly congenital, development of the condition, and the excellent general physical appearance of the patient.

Patient.—C. S., a boy, aged 6, was referred to me by Dr. W. T. Reynolds, of this city. He is an only child, and the cutaneous history of the family is negative. The birth was a normal one, and the patient's health has always been good. There is no history of an injury of any kind. Ever since early babyhood, there has been present, near the inner extremity of the left eyebrow, an area in which sweat production is very greatly increased. At times secretion is so rapid that a teaspoonful (4 c.c.) of liquid collects on the skin during a period of fifteen minutes. The hypersecretion is most noticeable in winter. The sweat is normal in odor and color. The patient has never complained of headaches or other subjective symptoms. Following the administration of pilocarpin, the flow of perspiration all over the body is considerably increased, and particularly in the affected region. Small doses of atropin (0.0002 gm.) are sufficient to check entirely the action of the coil glands in the affected area. Reflex stimulation by galvanization, slight sparking with the ordinary coil, or with a high-frequency electrode, and sudden changes of temperature will cause an exacerbation at any time, although the hypersecretion is more or less constant under ordinary conditions.

The patient is large for his age, and is a well-nourished and exceptionally intelligent boy, with brown hair and eyes. There is present no suggestion of hydrocephalus. Superficially, the skin is apparently normal in every way, and a careful physical examination (including blood and urine analyses, blood-pressure estimation, and luetin and von Pirquet tuberculin tests) disclosed nothing of interest. The pupillary reflexes are unaffected, and there are no errors of refraction. The extrinsic ocular muscles apparently are normal. About 4 c.c. above the inner canthus of the left eye, the skin is constantly covered with perspiration. The affected area is irregularly oval in outline, and measures 3 by 4 cm. in extent. Ordinarily the spot is covered with large beads of moisture, the amount being greatly increased during periods of mental excitement, and following electric and temperatural stimulation. Permission to perform a biopsy was repeatedly requested, but absolutely refused by the boy's father.

Hyperhidrosis circumscripta near the inner extremity of the left eyebrow.

Treatment.—In view of the very satisfactory results that may be secured by the intelligent application of the Roentgen rays in hyperhidrosis of the feet and hands, the affected region was treated with this agent. A tube of medium hardness was employed, and biweekly exposures of from four to six minutes' duration, at 15 cm. distance, were given (my experience with the Sabouraud-Noire pastilles and the various other instruments for measuring dosage has never been encouraging in this climate). Improvement was noted at the end of the second week, and the part was apparently normal after the seventh treatment. No erythema was produced, and, up to this time, eight weeks having elapsed, there is no loss of hair. It is very probable that the procedure will have to be repeated from time to time, until a considerable degree of permanent atrophy of the coil glands is obtained.

The beneficial effect of Roentgen therapy in this instance may be due to the action of the rays directly on the terminal filaments of the "sweat fibers" of the sensory nerves (as in the treatment of pruritus), but I consider Pusey's[2] explanation of their action (as exemplified in acne vulgaris) a more acceptable one. He considers it probable that the rays stimulate the endothelium of the capillaries, and that proliferation, with the development of an obliterative endarteritis, succeeded by atrophy of the contiguous glandular structures, results.

It is exceedingly unfortunate that a biopsy was not permitted, as a careful study of the affected tissue by the aid of the more modern staining methods would have been of great interest. The exact nature of the histopathologic changes in these cases is still in doubt, as the careful work of Robinson failed to confirm the earlier findings of Virchow.

1. Biedl: Wien. med. Presse, 1899, No. 14.

2. Pusey, William Allen: Berl. klin. Wchnschr., 1908, p. 1146.

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UNSUSPECTED LOSSES OF WATER FROM THE BODY

A recent contribution on the cause of death in experimental intestinal obstruction, published by Hartwell and Hoguet in THE JOURNAL,[1] deserves more than passing notice because of the useful therapeutic indications contained in the communication. These authors had earlier been able to exclude an invasion of the blood and organs by bacteria as causal factors in the marked toxic action which follows an obstruction of the bowel.[2] They were accordingly at first inclined to adopt an explanation which has been a refuge from various perplexing problems in the past. This attributes death and the accompanying pathologic phenomena to the absorption of products of alimentary origin which gain entrance into the circulation in a poisonous form through the destruction of the normal defense of the mucosa against such absorption. It remains to be seen whether or not toxins are elaborated when secondary factors, such as strangulation of the intestine and interference with its circulation occur. In the particular experiments under consideration great care was exercised not to obstruct the venous return or to impair the blood-supply in any way, so that the experiments cannot be regarded as excluding the possible influence of bacteria and their toxic products or even endogenous poisonous compounds under conditions in which necrosis of the tissues enters into the situation.

Hartwell and Hoguet noted in their earlier experience that the longest life of their animals, after the production of the simple obstruction, was under ten days. The vomiting which is a conspicuous symptom of the occlusion of the bowel not only deprived the animals of nutrient materials and water, but also led to an actual direct loss of water in the ejected matter. This suggested the desirability of counteracting the enforced thirst by subcutaneous administration of physiologic saline solution. The outcome of this was a surprising prolongation in the postoperative length of life. The abnormal metabolism in the experimental dogs prior to the saline injections was now changed to the characteristic metabolism of starvation, which such animals are able to survive for weeks and even months, when water is allowed to them.

The actual loss of water in the vomitus may far exceed the most liberal estimates that one might be inclined to make in the absence of precise determinations. In some of Hartwell and Hoguet's animals it averaged about 5 per cent. of the body weight each day and was more than ten times the amount which left the body simultaneously in the urine. The fact that the immediate serious consequences of intestinal obstruction were promptly delayed when desiccation of the tissues was prevented by the saline infusions emphasizes most strikingly the importance of the thirst factor in metabolism. There are manifold situations in human clinical experience in which uncompensated water losses may occur in similar ways. Doubtless these have not been recognized so frequently as they deserve to be; or when they have been foreseen, the attempted restitution of body fluid has been far from adequate. Protracted periods of intermittent vomiting need to be considered from these points of view, especially when the ingestion of water by mouth cannot be comfortably carried out in sufficient quantity. The organism can endure inanition far more successfully than thirst.

Another consideration is suggested by the experiments to which reference has been made. The vomitus was noted to contain not inconsiderable quantities of chlorin derived from the bile and gastric secretion which it represented. The depletion of the store of chlorids, which is probably accomplished more readily by loss of gastric secretion to the exterior than by any other means, is also of moment to the body. These factors — loss of water and loss of chlorin—are remediable by simple measures; and it is helpful to be reminded of causes and consequences which the clinician is liable to overlook despite the fact that they almost seem obvious.

1. Hartwell and Hoguet: Experimental Intestinal Obstruction in Dogs, THE JOURNAL A. M. A., July 13, p. 82.
2. Hartwell and Hoguet: Am. Jour. Med. Sc., March, 1912.

THE THYMUS AND THYROID IN RELATION TO DEVELOPMENT

The directive influence which some of the glands with so-called internal secretion exercise on the phenomena of growth and development can no longer be overlooked in the light that various pathologic manifestations have thrown on the subject. Certain types of infantilism are unquestionably associated with perverted functions of some of the ductless glands. In most cases all that we can at present regard as definitely established is a physiologic upset or an anatomic abnormality of the organism on the one hand, and a visible or tangible pathologic manifestation in some gland or tissue, on the other. The real significance of the essential interrelationship remains as obscure as it is probable.

The customary method of attacking the problems of these functional interactions has been to investigate the effects induced by administration of extracts or preparations of various glands on either normal or defective individuals. Dr. J. F. Gudernatsch[1] of New York has

1. Gudernatsch, J. F.: Fütterungsversuche an Amphibienlarven, Zentralbl. f. Physiol., 1912, xxvi, 323.

recently reported the results of experiments in which fresh glands were fed to rapidly growing animal forms, notably frog tadpoles. The precise significance of these trials is still far from apparent; but the outcome was so specific and characteristic that the observations deserve wider notice because of the suggestions inherent in them. The effects of feeding thymus and thyroid, respectively, two glands undoubtedly involved in the processes of development and tissue differentiation, were diametrically unlike. Whenever thyroid was fed all growth ceased, and the young tadpoles speedily exhibited symptoms of metamorphosis into adult forms. The tail became reduced in size prematurely and the missing limbs at once began to be evolved. The result of this inhibitory influence of the administered thyroid was the production of small dwarf frogs. The stage of transformation in which the tadpoles happened to be when the thyroid feeding was undertaken was apparently without moment. If they were large, the metamorphosed frogs derived from them were large; if small specimens were used in the experiments, diminutive, stunted forms could be produced by the thyroid feeding.

Quite different was the story with the thymus diet. Here early growth was markedly prolonged and the subsequent transformation of the tadpole stage into the adult form distinctly delayed. This evolution, which was unduly hastened by feeding thyroid, was decidedly inhibited under the influence of the thymus gland in the diet. Expressing the findings in terms of related phenomena, a method has apparently been devised by which infantile characters can be suppressed or perpetuated at will beyond the periods peculiar to them in the normal development of the species. Other distinctions, such as differences in the types of pigmentation, could also be made out. These details need not concern us here. The marked antithesis of the two glands under discussion in relation to the phenomena of growth adds new features for speculation to the other physiologic mysteries in which the thymus and thyroid still abound.

IMAGINATION IN SCIENCE AND MEDICINE

It has been said that every successful investigator must be endowed with a certain modicum of imagination without which most research is likely to be mediocre and devoid of genuine interest. Imagination — whether we call it by that name or designate it as tentative hypothesis or a working plan — is the incentive that spurs to the highest scientific effort. The ideas which stimulate to useful work are sometimes allowed to find expression in words before they are tested in reality by a crucial experiment. Sometimes they "work out," as we say; not infrequently they remain a tentative figment of the mind.

Prof. D. Fraser Harris of Dalhousie University has brought together in print[1] some instances in which an idea first represented by a metaphorical expression has in time become clothed with reality. Oxygen was merely a principle to Lavoisier in 1777; and when, a century later, it was produced in liquefied form, "the metaphor had become an actuality." When in writing of the blood Harvey wondered whether there might not be motion, as it were, in a circle, he expressed in metaphorical language what only later became the fact of the "circulation" through the visible demonstration of Malpighi. Willis penned the metaphor as to the impression of an object driving the animal spirits inward, thus giving rise to sensation, whereupon they rebound outward "in a reflected wave as it were" to call forth local movement. This mental picture portrays those reflex actions of which physiology to-day can demonstrate the actual phenomena and modern histology unfold their material paths to the eye. In physiologic chemistry the synthesis of the active principle of the suprarenal glands represents "the crystallization of a notion; the thing of the mind has become a thing of the laboratory; the thought has been captured and bottled."

When implicit foreshadowings form in the mind there develop a desire and a manifest tendency to realize an explicit embodiment. We search for the physical basis of nerve-force and fatigue — and even of thought. Modern science is trying to render tangible and visible the seats and causes of functions. Nervous exhaustion, for example, must become correlated with the substantial exhaustion of Nissl granules or the like. Vague forces no longer suffice to satisfy the inquiring mind; the substance itself — toxin, antitoxin, enzyme, carrier — must be discovered. As Harris remarks, it is largely in the sphere of the healing art that this modern tendency toward concreteness is to be seen in its highest perfection. Paludism and the mystery of night air, "telluric influences," malaria in its original significance of "bad air," have been robbed of their primitive vagueness by the discovery of an actual, living organism responsible for the diverse manifestations with which the imagination had previously endowed them. Thus it is sometimes given to the man of science "to touch, to taste, to handle what was once only a notion, a suggestion, a forecast either in his own day or that of a less fortunate predecessor." The fabric of medical progress — indeed, of all progress — is woven from legitimate dreams to a greater extent than the "practical" man is wont to realize or willing to admit.

1. Harris, D. F.: The Metaphor in Science, Science, Aug. 30, 1912, p. 263.

PUBLIC HEALTH SERVICE TUBERCULOSIS SANATORIUM

It is not widely known that, in addition to its twenty-three marine hospitals for American merchant seamen located in the larger ports, the Public Health Service maintains a tuberculosis sanatorium at Fort Stanton, N. Mex. This institution is conducted for the benefit of tuberculous seamen and other beneficiaries of the federal marine hospitals. From its foundation in 1899

to June 30, 1912, a total of 1,937 patients had been discharged. The institution was described in an illustrated article by Dr. P. M. Carrington in THE JOURNAL A. M. A., Dec. 6, 1902.

The report of the director, F. C. Smith,[1] for the fiscal year ending June 30, 1912, shows that 178 patients were discharged during the year, of whom twenty were cured, twenty-five were distinctly improved, and in fifty-seven the disease was arrested. At the end of the year 176 patients were under treatment. There were fifty-eight deaths, of which ten were due to pulmonary hemorrhage complicating tuberculosis. The large percentage of deaths from pulmonary hemorrhage is further shown by the fact that in 673 deaths at the sanatorium since its foundation, seventy-two, or 10.7 per cent., were due to this cause. Smith states that no records are available of any other institution in this country reporting so high a death-rate from pulmonary hemorrhage as this, although several are at equal or greater altitudes. He believes that the accurate system of clinical records required in the Public Health Service hospitals has revealed facts not peculiar to Fort Stanton, but not so far generally noted elsewhere.

It is to be noted that Fort Stanton admits both early and late cases of tuberculosis. While Smith does not discuss the relative usefulness of institutions following this plan as compared with those admitting only early cases, it is true that the former serve a double function in that not only are tuberculous patients in all stages afforded the care and treatment they require, but by segregating particularly the advanced cases, dangerous foci of infection are removed from the community. Especially is this important in the class of patients received at Fort Stanton. The sailor with advanced tuberculosis is a sanitary menace above the ordinary, because of his habits of life and his associations. To segregate such a man is an evident safeguard to the community.

In treating active tuberculosis, the only curative measures employed are rest, fresh air and good food. Drugs are used, however, as indicated by acute symptoms. The use of tuberculin has been entirely discontinued, as its effect is believed to be limited chiefly to the results of its administration on the mental condition of the patient. Eighty-seven tent-houses, each accommodating two persons, are in use. The average number of patients in the infirmary is thirty-five. The experience of thirteen years at Fort Stanton confirms the fast-growing belief that climate in itself is not of first importance in the treatment of pulmonary tuberculosis, but that hygienic living, rest both mental and physical, abundant food and fresh air are the best curative agents so far available. These can be obtained better at home in most cases than by an arduous and expensive journey to a supposedly more propitious climate.

1. Public Health Reports, Aug. 30, 1912.

CAN LIFE BE MADE?

Within the past few days the public press has furnished much comment on the nature, origin and maintenance of life, which formed the topic for the annual address before the British Association for the Advancement of Science by its president, the eminent Edinburgh physiologist, Prof. E. A. Schäfer.[1] It is an interesting, if not surprising, sign of the times, that such questions, which were regarded not long ago as outside the sphere of scientific discussion, should be given calm and critical analysis by wide circles of interested laymen and biologists alike. It requires no great stretch of the imagination to picture days when all this would have been both heretical and hazardous before a British audience.

The keynote to Professor Schäfer's address is the conclusion that the possibility of the production of life — that is, of living material — is not so remote as has generally been assumed. It is, perhaps, worth while to dwell for a moment on some of the considerations which seem to justify this view. The line of demarcation between inorganic and organic chemistry has now largely disappeared; and biochemistry has won a place for the treatment of the chemical functions of living organisms in immediate relation to these older branches. The study of what were once called "vital processes" is passing more and more out of the hands of the pure biologist into those of the pure chemist. Again, in the modern development of physical chemistry, the newly recognized properties of nitrogenous and other colloids are furnishing the key for the solution of numerous phenomena which earlier escaped a tenable interpretation on the basis of chemistry and physics. Living substance or protoplasm takes the form of a colloidal solution; and many of the manifestations characteristic of changes in living substance find an exemplification in the behavior of such solutions.

A search for properties hitherto assumed to differentiate specifically between the living and the non-living shows that they are by no means confined to what is designated as animate creation. In the aggregation and growth of crystal structures out of a suitable pabulum are found striking analogies with the growth and multiplication of organic forms. The functions of enzymes, which are commonly regarded as agents peculiar to protoplasm, can be duplicated by catalytic substances and methods of purely chemical and physical nature. Even so distinctive a manifestation as the division of the ovum and multiplication of cells by the subsequent processes can be initiated when simple chemical agents are substituted for the spermatozoon in the process of fertilization.

Again, Professor Schäfer has pointed out that in some respects the living substances — the substratum for our vital activities — have been resolved by modern chemical investigations so as to disclose a constitution of no over-

1. Schäfer, E. A.: Science, September 6, p. 289; briefly abstracted in London Letter, THE JOURNAL A. M. A., Sept. 21, p. 953.

whelming complexity. Here he must have had in mind the nucleus and nucleoprotein whose composition is succumbing to the attacks of the organic chemist. He reminds us that the elements composing living matter are, after all, few. "The combination of these elements into a colloidal compound represents the chemical basis of life; and when the chemist succeeds in building up this compound it will without doubt be found to exhibit the phenomena which we are in the habit of associating with the term 'life.'"

Here, then, is a refreshing optimism in regard to the production of living substance. It must not be assumed that this is the equivalent of the long-since discarded doctrine of spontaneous generation. Far from it. We are taught by Schäfer to reject any idea of supernatural intervention or any of the various cosmic theories of the origin of life on this globe. The true explanation is to be found in a gradual process of evolution, the same cause as that which has been instrumental in producing all other forms of matter in the universe. It is not necessary to assume that the evolution of life occurred but once in the past; it may be going on now; it may go on in the future. Neither are we forced to assume that because living matter always contains water as its most abundant constituent, life must have made its first appearance in the depths of the ocean.

For the contention that the destruction of life can be eliminated — a view approached by Metchnikoff in his assumption that the condition of senescence is itself abnormal and that old age is a manifestation of disease — Schäfer finds no support. "It is only in the sense of its propagation from one generation to another," he says, "that we can speak of the indefinite continuance of life; we can be immortal only through our descendants." The lesson in this consists in the desirability of insuring that inevitable death may occur in a natural way — death unattended or unaccelerated by disease. If man can anticipate this quiet change without apprehension — if he can learn to regard the approach of a simple physiologic process as a natural consequence, death, according to Schäfer, will be robbed of its terrors and the dread of the final passing dispersed.

Whether or not one agrees with the essence or the details of Professor Schäfer's inspiring contribution to the literature of an inviting question, his frankness and originality must be admired. The storm of contradiction which it has already awakened need not dispel the belief that "the sunshine which science irradiates" will yet put to flight many of our ultravitalistic conceptions.

Current Comment

HARD WATER AND URINARY CALCULI

The general or repeated occurrence of a malady in a restricted area offers a suitable opportunity for the investigation of its etiology. There are regions in Asia where urinary calculi are said to be a frequent finding among the most diverse classes of the population. The calculi are apparently not restricted to persons of any special age or race, if one may judge by the patients who come to the physician for relief. Abderhalden and Hanslian[1] have lately had the opportunity of making a chemical examination of a considerable number of these Asiatic calculi of which the clinical history was known. They were found to consist, in the main, of inorganic components. Calcium was invariably present. Magnesium and phosphoric acid were commonly found. Some also contained oxalates and carbonates; occasionally a urate calculus appeared. In seeking for local conditions which might serve to explain the formation of concretions of which lime and magnesium are the conspicuous components, an examination of the most common article of diet and of the waters of the region was made. A preparation termed "burghul," made from wheat, forms the staple food, which is consumed in large amounts. This was, however, not found to be richer in calcium and magnesium than the corresponding wheat products in European countries. On the other hand, the investigation of both surface and underground waters from the region disclosed an unexpected hardness of the temporary type. Abderhalden regards it as quite probable, accordingly, that the easily precipitable carbonates of calcium and magnesium play a conspicuous part in the production of the prevalent calculi.

REVIVAL OF THE THEORY OF MIASMAS

An attempt to reconcile the old theories of miasmas with the present conception of the bacterial origin of diseases has been made by Dr. A. Trillat.[2] In some experiments conducted by him to test the vitality and fecundity of bacteria he found that the bacilli of diphtheria and plague were remarkably stimulated in their growth by exposure to air containing small traces of putrid gases. The experiments were first conducted under laboratory conditions, and later by exposing similar bacteria to the products of natural putrefaction out of doors, in the neighborhood of marshes, sewers, etc. If the results of these experiments are confirmed, the present methods of disinfection by direct destruction of infective bacteria may have to be modified again to conform more nearly to the old miasmatic theory of the production of disease, and we shall condemn leaky sewer-pipes and other sources of bad smells not only for esthetic reasons, but on account of their effect in promoting the infections. We assume that the experiments apply only to the aerobic bacteria. Trillat similarly attempts to account for the souring of milk and the putrefaction of meat during thunder storms, not by the effect of the electricity on these substances, or by the production of nitric acid in the air, but on the principle that storms promote the release of putrid gases from the soil and these gases stimulate the development of putrefactive bacteria. The theory is interesting and should be capable of demonstration.

1. Abderhalden and Hanslian: Beiträge zur Kenntnis der Zusammensetzung der Blasensteine von Bewohnern Kleinasiens: Versuch die Ursache ihrer Enstehung zu ergründen, Ztschr. f. physiol. Chem., 1912, lxxx, 113.
2. Trillat, A.: Arch. d. sc. phys. et nat., June 15, 1912.

A MISGUIDED SWINDLER

An enterprising swindler in England has recently been arrested for selling dried peas as "Little Liver Pills." They were sold on the assurance that they were "excellent medicine." Of course, dried peas are not an "excellent medicine" neither will they cure "liver trouble," but the same may be said of the many "liver pills" which contain drugs and are sold under claims even more fraudulent. The British swindler should have been better informed. When he desires to sell "liver pills" he should put some drugs in them — poisonous or otherwise, the kind doesn't matter. Then he can lie about his product to his heart's content and he will be immune from arrest. In fact, if he can sell enough of them he may look forward to a peerage. In Great Britain, as in the United States, it is not the mere act of swindling, but the method, that proves dangerous.

THE HYGIENE CONGRESS

This week the Fifteenth International Congress on Hygiene and Demography has been in session in Washington, D. C., and has proved a notable achievement among congresses. We commence in this issue a report of the scientific proceedings, which will be continued in next week's issue. The exhibit in connection with the congress is reported as a great success. All manner of displays and demonstrations in the various ramifications of the subject of hygiene are being presented to the public, and will have great influence in the way of education. The American Medical Association has an exhibit, giving particular attention to some of the most striking features of that department of THE JOURNAL called The Propaganda for Reform. This congress is a milestone in the advance toward better health and sanitation in this country.

Medical News

CALIFORNIA

Sanitation Car to Washington.—The California State Board of Health sanitation car was sent to Washington under charge of Dr. J. F. Leinen, assistant to the secretary of the board, to be exhibited at the International Congress on Hygiene.

The New Home Project in Los Angeles.—The bulletin of the Los Angeles County Medical Association for September 14 devotes considerable space to the proposition of the medical building. The plan has made excellent progress and many space reservations have already been made, justifying the expectation that the building will be a financial success.

Personal.—Dr. George H. Kress has returned from abroad. ——Dr. and Mrs. A. T. Newcomb, Pasadena, have gone abroad. ——Dr. R. L. Richards, M.C., U. S. Army, San Francisco, has been appointed medical superintendent of the Mendocino State Hospital, Talmage, vice Dr. E. Warren King, resigned.——Dr. T. Orde Smith, South Berkeley, was seriously injured in a collision with an automobile, September 13.——Dr. Ernest B. Hoag, health officer of Berkeley, has been appointed State Health Officer of Minnesota.——Dr. A. P. O'Brien, San Francisco, suffered a compound fracture of the leg by a fall while on a fishing excursion, recently.——Dr. and Mrs. John Galloway, San Francisco, have returned from Europe.——Dr. Ellis Harbert, Stockton, has been appointed a member of the Board of Managers of the Stockton State Hospital.

ILLINOIS

Personal.—Drs. Anna Weld and W. R. Fringer, Rockford, have returned from abroad.——Dr. Harry R. Carson, Princeton, has been appointed assistant superintendent of the Steuben Sanatorium, Hornell, N. Y.——Dr. P. N. Bowman, Gillespie, was seriously injured in a trolley car accident at Worden, September 14.

Chicago

Commers for Visiting Scientists.—In addition to other events already mentioned in these columns, the German Medical Society and Association of Old German Students will hold a Commers at the Germania Club House, September 29, in honor of the delegation of foreign scientists.

Personal.—Dr. H. G. W. Reinhardt has been appointed chief coroner's physician, vice Dr. Warren E. Hunter, deceased.—— Dr. and Mrs. Frederick H. England have returned from Europe.——Dr. Peter J. Christenson was found unconscious beside his overturned automobile, September 20. His injuries are slight.——Dr. W. A. Evans has been elected vice-president of the National Mouth Hygiene Association.——Dr. Adolfo Luria has returned and resumed practice after four years' study in Europe.

KENTUCKY

Infirmary Opened.—The Hopkinsville Infirmary, located in a large residence on Clay Street, which has been remodeled for hospital purposes, was opened last week. Dr. J. E. Stone is president of the institution and Dr. J. Paul Keith secretary-treasurer.

Personal.—Dr. Lewis S. McMurtry, Louisville, has returned after a summer abroad.——Dr. and Mrs. Joseph M. Mathews, Louisville, have returned after several months on the Pacific Coast.——Dr. Frank E. Corrigan, Louisville, who has been seriously ill, is reported to be much improved.——Dr. Amos G. Browning, Maysville, is ill in a sanitarium in Chicago.

The Work of the Health Department.—The Louisville Health Department, in a recent monthly bulletin, gives credit to the Babies' Milk Fund Association for decreasing the mortality of infants almost 50 per cent.——The mortality from tuberculosis has been considerably decreased owing to a campaign of education conducted by the Antituberculosis Association. Six nurses have made 9,149 visits to the poor during the year, giving advice as to the prevention of tuberculosis by proper living.——The Health Department urges the passage of the ordinance introduced in the General Council last year, providing for the screening of manure piles to do away with breeding-places for flies and mosquitoes.

LOUISIANA

Sanitarium Reopened.—The Ruston Sanitarium, closed several months ago, has reopened in charge of a trained nurse.

Health Train for Washington.—Exhibition cars Numbers 1 and 2 of the State Board of Health left for Washington, September 15, to be exhibited at the National Congress on Hygiene and Demography. Drs. Oscar Dowling and Meyer Neuhouser accompanied the train, which will make stops going and returning at Meridian, Miss.; Birmingham, Ala.; Atlanta, Ga.; Greensboro, N. C.; Lynchburg, Va.; Montgomery, Ala., and Mobile, Ala.

Personal.—Dr. Oscar Dowling, New Orleans, has been elected third vice-president of the National Mouth Hygiene Association.——Dr. Willis P. Butler, Nashville, Tenn., has succeeded Dr. A. P. Crain as bacteriologist and chemist of the Shreveport Board of Health.——Drs. E. L. Henry, Lecompte, and L. E. Litton, Tioga, have been appointed members of the board of administration of the Louisiana Hospital for the Insane, Pineville.——The office and residence of Dr. Maurice Bateman, Franklinton, was destroyed by fire, September 8, with a loss of $1,000.

MARYLAND

Sanatorium Incorporated.—The Springer Sanatorium Company has been incorporated with the object to institute and maintain a private institution at Govanstown.

Common Drinking-Cup Law Enforced.—The State Board of Health has enforced the act recently passed by the legislature prohibiting the use of the common drinking-cup in places and vehicles.

Baltimore

Harriett Lane Home Soon to be Opened.—It is announced that the Harriett Lane Home for Children, Johns Hopkins Hospital, will be opened October 1. The building has been erected at a cost of $300,000 and has accommodation for 100 children. It will be in charge of Dr. John Howland.

Personal.—Dr. Edwin V. Whittaker has been appointed assistant superintendent of the Sydenham Hospital for Infectious Diseases, vice Dr. Sidney Wallenstein, resigned.——Dr. John T. McCarthy is reported to be ill—nervous breakdown.

——Dr. J. T. Sample and R. H. Major have sailed for Europe.——Dr. Lewis R. Palmer is reported to be seriously ill in a hospital in Philadelphia.

MASSACHUSETTS

Hospital Notes.—The Boston Floating Hospital has made its last trip for the season. During the summer the hospital has cared for 5,784 day patients.——The Glover Home and Hospital, Needham, formerly the home of the late Fred P. Glover, with accommodation for seven patients, has been opened to the public.

Personal.—Dr. and Mrs. Charles F. K. Bean, West Medford, have sailed for Europe.——Dr. H. H. Cleveland, Boston, was badly cut and shaken in a collision between his automobile and a large touring car in Newton, September 18.——Dr. Mary Katherine Couch, Somerville, has been appointed a member of the medical staff of the Northampton State Hospital.——Dr. George R. Fessenden, Ashfield, has been reappointed medical examiner of Franklin County.——A petition has been sent to the governor signed by nearly 1,000 physicians, headed by ten past presidents of the Massachusetts Medical Society, urging the reappointment of Dr. Herbert B. Howard, superintendent of the new Peter Brent Brigham Hospital, as a member of the State Board of Insanity.

NEW YORK

New Officers.—Saratoga County Medical Society: president, Dr. J. B. Ledlie, Saratoga Springs; secretary, Dr. James T. Sweetman, Jr., Ballston Spa.

Personal.—Dr. and Mrs. Amos T. Baker, Riverdale, sailed for Europe, September 10.——Dr. Jacob W. Bayliss, Buffalo, was seriously injured in a collision between his automobile and a taxicab, September 10.

Protest Against Tuberculosis Hospital.—There is a movement on foot among the residents in the vicinity to make a protest to the State Board of Health against the establishment of the proposed $250,000 tuberculosis hospital at Croton Lake in the heart of the New York watershed. Property owners object to such an institution as they claim that it would decrease the value of property in that locality.

Plan Fall Campaign Against Tuberculosis.—The State Department of Health and the State Charities Aid Association held a conference in New York City September 18 to plan their work for the fall. They intend to conduct an intensive campaign for county tuberculosis hospitals. Already twenty-one counties have decided to build tuberculosis hospitals, and it is hoped to bring the number up to thirty before the holidays.

New York City

German Scientist Dies in New York City.—Prof. Dr. H. Wiebe, a member of the Imperial Chemical Institute, Charlottenburg, Germany; a delegate to the Chemical Congress; died suddenly while dining at the Hotel Netherland, September 11.

Personal.—Dr. Albert Brundage, Brooklyn, is reported to be critically ill in Maine.——Dr. John Livingston, ambulance surgeon of the Hudson Street Hospital, was seriously injured in a collision between the ambulance on which he was riding and an automobile, September 15.

Middleton Goldsmith Lectures.—These lectures of the New York Pathological Society will be delivered at the New York Academy of Medicine, 17 West Forty-Third Street, October 2 and 4, at 8:30 p. m., by Dr. E. F. Bashford, director of the Imperial Cancer Research Fund of London, England, the subject being, "A Review of Recent Cancer Research." All interested are invited.

The German Travel Party.—The physicians of this city entertained the foreign physicians last week. Sight-seeing trips and entertainments were provided for every day of the week. Dr. Abraham Jacobi was chairman of the reception committee. A dinner was given in honor of these visitors on the evening of September 18 at the Hotel Astor at which Dr. Wolff Freudenthal acted as toastmaster. The Post-Graduate Medical School and Hospital gave a reception on the 19th and the Liederkrantz Society also entertained.

Preparing to Aid Babies in Winter.—The Babies' Welfare Association report for the week ended September 14 shows a further decrease in the mortality among children under 1 year of age. There were only 312 deaths during the week as compared with 322 for the corresponding week of last year. The report would have been much better had Brooklyn not nearly doubled its record of deaths from intestinal diseases. In every other borough there was a decrease as compared with previous years. The association is making preparations to continue its work among the children of congested districts during the winter months.

PENNSYLVANIA

Sanatorium Notes.—Work on the State Sanatorium near Hamburg was started last week. It is the intention of the contractors to complete the foundation before cold weather, so that the work of construction may not be impeded through the winter.——Dr. W. W. Richardson, Norristown, has purchased the Mercer Sanatorium.

Personal.—Dr. T. C. Fitzsimmons, Waymart, has been elected permanent superintendent of the Fairview Hospital for the Criminal Insane.——Dr. William Davis, Scranton, has resigned as a member of the staff of the Moses Taylor Hospital to accept a position with American National Red Cross.——Dr. Ralph W. Montelius, Mount Carmel, has been elected president of the board of trustees of the State Hospital for the Trevorten, Shamokin and Mount Carmel coal fields of Pennsylvania.——Dr. William S. Middleton, Norristown, has moved to Madison, Wis.——The home of Dr. E. H. Sloan, Ben Avon, was burglarized, September 6.

Small-Pox Epidemic in Pittsburgh.—As the small-pox, which has been raging in Pittsburgh for several weeks, shows no abatement, the board of health ordered the vaccination of all messengers in the employ of the telegraph and telephone companies, of employees of delivery firms, street car conductors and motormen, bank clerks, department-store clerks and others who come in contact with the public daily. The city has been placarded with pictures of stricken victims in all stages of the disease for the benefit of those who are not able to recognize the disease in its first stages. Up to September 18, the total number of cases had reached 100, with nineteen deaths. The disease, which at first was confined to the Penn Avenue district, has now spread to other parts of the city. The hospitals and all public institutions are refusing visitors for the present.

Small-Pox in Carbondale.—Because of the seriousness of the small-pox epidemic in Carbondale, Dr. C. J. Hunt, associate chief medical director of the State Department of Health, has ordered the immediate cessation of all public weddings and funerals and the state police are maintaining a strict quarantine of all infected districts. The spread of small-pox in Carbondale is attributed to the carelessness of the local health authorities and physicians in failing to differentiate between chickenpox and small-pox. C. W. Webbert, chief inspector of the State Department of Health, has caused the arrest of five physicians who were arraigned September 20, pleaded guilty, and each was fined $20 and costs.——The State Department of Health has sent out letters to the physicians of Pennsylvania, excepting those of Philadelphia and Pittsburgh, stating that as Carbondale has no active board of health and as an epidemic of small-pox is menacing the health and lives of the people of the state, Dr. C. J. Hunt has been directed to take full charge of public health regulations in Carbondale, to enforce quarantine restrictions and such other measures as may be necessary for the suppression of the epidemic. Physicians are furthermore directed to report the different forms of cases of communicable diseases coming under their observation, until further notice is received from the department.

Philadelphia

Steamship Held in Quarantine.—The steamship *Graf Waldersee*, with 1,382 passengers, was detained at Reedy Island Quarantine Station, September 21, because of a suspected case of small-pox in the steerage.

Philadelphia Entertains Foreign Physicians.—Under the auspices of the German Central Committee for Physicians' Study Travels, about 250 physicians of Germany and Austria, a list of whom was given in THE JOURNAL, August 24, arrived in Philadelphia, September 20, and were met at the station by a reception committee headed by Dr. J. M. Anders. They were taken in automobiles to the city hall where they were formally welcomed by the mayor. In the evening they were given a reception at the Hotel Walton by the Philadelphia County Medical Society. On the next day they visited the different medical colleges and hospitals of the city, and in the evening were entertained at a banquet given by the city on the roof garden of the Continental Hotel. Dr. James M. Anders presided as toastmaster. Hon. Rudolph Blankenburg, mayor of Philadelphia, responded to the toast, "My City;" Dr. Arthur Mudra, Imperial German consul, to the toast "Foreign Countries;" Prof. August Hoffman, Düsseldorf, Germany, to the toast "Internal Medicine;" Hon. Charlamagne Tower, formerly ambassador to Germany, to the toast "International

Friendship;" the State Commissioner of Health, Dr. Samuel G. Dixon, to the toast "The Health Department of Pennsylvania;" Geheimrath Dr. August Gaertner, professor of bacteriology and sanitary science in the University of Jena, to the toast, "The Hygiene Laboratory;" Dr. Joseph S. Neff, director of Public Health and Charities, Philadelphia, to the toast, "Municipal Hygiene;" Geheimrath Prof. Dr. Fr. Leoffler, Berlin, to the toast, "Scientific Discoveries;" Charles J. Hexamer, president of the German-American Alliance, to the toast, "The German-American," and Dr. Solomon Solis-Cohen, to the toast, "Former Great Clinicians of Philadelphia."

GENERAL AND FOREIGN

International Congress on Infantile Hygiene.—The International Congress for the Study of Infantile Hygiene and Pathology will be held in Paris, October 7.

Red Cross Prizes Awarded.—For their inventions for the alleviation of human suffering, Major Paul S. Halloran and Capt. Henry L. Brown, M. C., U. S. Army, received $505.05 each on September 7, as prizes awarded by the Ninth International Red Cross Conference recently in session in Washington. These prizes are from the fund donated for this purpose by the Empress Marie Feodorovna of Russia.

Prize for Work on Criminal Anthropology.—The Lombroso prize of $200 (1,000 lire) is to be awarded at the eighth international congress on criminal anthropology, to be held at Budapest in 1914. Competition is open to the world; the prize is to be given for the best work or most important discovery in this field between 1911 and 1914. The committee in charge of the congress and awarding of the prize includes Prof. G. Aschaffenburg, Cologne, Germany, and Prof. J. von Balogh, Budapest, Hungary.

Obstetricians and Gynecologists Elect Officers.—At the twenty-fifth annual meeting of the Association of Obstetricians and Gynecologists held in Toledo, Ohio, September 17-19, the following officers were elected: president, Dr. Miles F. Porter, Fort Wayne, Ind.; vice-presidents, Drs. Charles N. Smith, Toledo, Ohio, and James E. Sadlier, Poughkeepsie; secretary, Dr. E. Gustav Zinke, Cincinnati (reelected) and treasurer, Dr. Herman E. Hayd, Buffalo, N. Y. Providence was selected as the next place of meeting.

Health Association Meeting.—At the fortieth annual meeting of the American Public Health Association held in Washington, September 18 to 20, the following officers were elected: president, Dr. Rudolph Haring, New York City; vice-presidents, Drs. W. R. Batt, Harrisburg, Pa., James Roberts, Hamilton, Ont., and J. E. Monjaras, Mexico; secretary, Dr. Selskar H. Gunn, and treasurer, Dr. Livingston Farrand, New York City. It was decided to hold the next meeting of the association in Colorado Springs, Colo.

Study of Infant Mortality.—The third annual meeting of the Association for Study and Prevention of Infant Mortality will be held in Cleveland, October 2-5, under the presidency of Dr. Cressy L. Wilbur, Washington, D. C. The work of the association is divided into sections on educational prevention of infant mortality, eugenics, nursing and social work and prevention of municipal infant mortality. The headquarters of the association are at the Hotel Hollenden and the general sessions and section meetings will be held at the Engineers' Auditorium.

Pensions for Physicians in Spain.—The *Siglo Medico* of July 20 gives the details of the law which provides for an annual pension of from 800 to 1,500 pesetas for physicians connected with the public health service who have become incapacitated in fighting some declared epidemic. Physicians in private practice who lend their services in the epidemic are also included among the beneficiaries of the law. The pension is also to be paid to the widows and orphans of those who have died at their post. A retiring pension of 1,000 pesetas is also available for public health officials who have been thirty years in the service. A peseta is 20 cents.

Another Insurance Agent Fooling Physicians.—A physician in Ogden, Utah, sends his opinion that the physician continues to head the sucker list. He reports that all along the line from Seattle to Salt Lake City physicians have been worked by a polished agent representing the "Royal Order of the Lyons," who appoints a physician exclusive medical examiner for his soon-to-be-organized lodge, allowing him to enter as a charter member for $5.00, promising several hundred examinations at $1.00 a head. The $5.00 and the agent depart, to be seen no more. THE JOURNAL receives word of some such scheme every little while, and all the schemes are similar in that they show the physician is too ready to part with money to perfect strangers.

Investigation of Health Conditions Among Indians.—The Surgeon-General of the U. S. Public Health Service has begun an extensive investigation of health conditions among the Indians, particularly with reference to tuberculosis, trachoma and small-pox. For the carrying-out of this plan, $10,000 has been appropriated by Congress. The commission consists of Passed Assistant Surgeons R. J. Lloyd, Washington and Idaho; W. C. Billings, Colorado, Oregon and Nevada; F. C. Smith, New Mexico; R. A. Herring, Utah, Colorado, Wyoming, Kansas and Nebraska; L. D. Fricks, Arizona; M. C. Guthrie, Oklahoma; Mark J. White, Montana; J. W. Schereschewsky, North Dakota and South Dakota, and Surgeon Taliaferro Clark, Minnesota, Wisconsin and Iowa.

Infectious Diseases.—A case of plague was reported from the municipality of San Juan, P. R., September 12. It is believed that the focus from which this case originated has been destroyed. During the week ending August 31, two plague-infected ground-squirrels were found in Alameda County, Cal. A plague infected rat was found at Olaa, Hawaii, September 9, which was the first infected rat found since April 24, 1912. A rat-catcher at Pepeekeo died September 13 of plague, which was the first case of human plague reported in Hawaii since March 14. Two deaths from plague in schoolboys are reported in Manila, August 4. This makes a total of four cases in Manila since June 19, 1912. No plague-infected rats have been found in the vicinity where these cases occurred.——Two cases of plague, one resulting fatally, are reported from Hamburg, arriving at that port, September 17, from Rosario, Argentina, on a British steamer. ——Cases of poliomyelitis continue to be reported in small numbers from a large number of places widely distributed throughout the country. The two foci having the largest number of cases are in Los Angeles, and in western New York with its center in Buffalo. Sixty-one cases of poliomyelitis occurred in Chicago during the first eight months of 1912. It has been made a quarantinable disease in that city.——Many cases of small-pox continue to occur in Pittsburgh. The disease is of the virulent type and the mortality is high.

Harvey Society Lectures.—The Harvey Society, New York city, announces the following provisional program of lectures, subjects and dates for the season 1912-13:

1912
Oct. 5 Prof. Max Rubner:
University of Berlin.
"Modern Steam Sterilization."
Nov. 9 Prof. Joseph Erlanger:
George Washington University.
"The Localization of Impulse Initiation and Conduction in the Heart."
Nov. 23 Prof. G. N. Stewart:
Western Reserve University.
"The Rate of the Blood-Flow and the Vasomotor Reflexes in Disease."
Dec. 14 Prof. F. B. Mallory:
Harvard University.
"The Infectious Lesions of Blood-Vessels."
1913
Jan. 18 Maj. J. J. Russell, U. S. Army.
"The Prevention of Typhoid Fever."
Feb. 15 Prof. Theodore C. Janeway:
Columbia University.
"Nephritic Hypertension: Clinical and Experimental Studies."
Mch. 1 Prof. Edward G. Conklin:
Princeton University.
"The Size of Organisms and Their Constituent Parts in Relation to Longevity, Senescence and Rejuvenescence."
Mch. 22 Prof. John Howland:
Johns Hopkins University.
"The Scientific Basis for the Artificial Feeding of Infants."

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Sept. 14, 1912.

Steps in Human Ancestry

At the annual meeting of the British Association for the Advancement of Science, Prof. G. Elliot Smith, president of the Section on Anthropology, delivered an interesting address on steps in human ancestry. He said that in spite of all the precise knowledge concerning the bodily structure and functions of apes and men, and their "blood relationships," using the term in its literal as well as its metaphorical sense, it was surprising that there should be so little agreement among leading authorities as to the precise line of man's ancestry. Some zoologists maintained that man was not closely related to the old-world apes and sought for closer affinities with the new-world apes, or even with the lemurs. The advance of brain structure more than anything else determined the evolution of mammals as it alone had given

them their dominant position, their world-wide distribution and their marvelous adaptability to many modes of life. The new feature in the brain of mammals which had made possible all their achievements was the cortical area, to which eleven years ago he gave the name "neopallium." In the lower vertebrates each of the avenues of the senses led to a special part of the brain, and although there were free communications between the regions allotted to the olfactory, visual, auditory, tactile and other senses, there was no instrument for the adequate blending of impressions reaching the brain through these different portals or for the storing of impressions, so as to awaken in consciousness the different properties of an object which appealed to several different senses. The lower vertebrates do not see, hear or feel an object in the sense that we associate with these terms. The neopallium of the mammal provided a receptive organ for impressions through all the senses and for their unification and record, so that they could be revived in associative memory. Moreover, it was the instrument by which all perceptions, past and present, could be freely blended in consciousness, so that the animal could appreciate all the properties of any object to whatever sense they might appeal, and could benefit and so be educated by experience.

INFLUENCES OF ARBOREAL LIFE

In the forerunners of the mammalia the cerebral hemisphere was predominantly olfactory. Even when the mammal emerged and all the other senses received due representation in the neopallium, the animal was still influenced to a much greater extent by smell than by other senses. The adoption of arboreal life by some small insectivore-like creature, shortly before the dawn of the Tertiary Period, and the subsequent cultivation of the sense of vision enabled man's remotest primate ancestor to escape from the domination of the sense of smell and to cultivate other senses, immensely widening the sensory avenues. The demands of arboreal life led to the cultivation of skilled movements of the limbs, which was facilitated by visual control. Such skill necessitated increased perfection of the tactile and other sensory areas of the brain. The coordination of large groups of muscles for performing some precise action, which must be controlled during the stage of learning by tactile, kinesthetic and visual impressions and memories—the fruits of experience—necessitated the formation of some cortical apparatus which would control and harmonize the activities of the various centers, regulating the muscular actions and bringing the total sum of consciousness at any moment to bear on the performance of a given act. Out of this necessity, in the early ancestry of man and in much less degree in other animals, sprang an outgrowth of the motor cortex which became the mechanism for attention and the orderly regulation of the psychic processes. Thus, at the very dawn of the Tertiary Period there was developed the germ of all the psychic greatness, which, in the million or so of years that followed, culminated in the human mind. The Primates found in the branches of trees the asylum and protection necessary for the cultivation of brain and limbs during the period of their insecurity as an insignificant tribe, but, when they became able to hold their own and waxed great both in size and power, they had maintained sufficient of their primitive character of plasticity to be able gradually to give up arboreal life and to reestablish themselves once more as dwellers on the solid earth, competent to hold their own against all comers.

MAN AND THE ERECT ATTITUDE

Professor Smith was inclined to look on the orang, the chimpanzee and the gorilla, not as ancestors of man, but as the more unenterprising members of man's family who were not able to maintain the high level of cerebral development of the feeble-bodied human being, but saved themselves from extinction by acquisition of great strength and a certain specialization of structure. The feebler man was able to overcome his enemies and maintain himself in the struggle for existence by his nimbleness of wit and superior adaptability to varying circumstances. The erect attitude was brought about when the development of the brain made skilled movements of the hands possible. The liberation of the hands for the performance of more delicate movements opened the way for a further advance in brain development to make the most of the more favorable conditions. If the earliest gibbons were already able to walk upright, how was it that they did not begin to use their hands for skilled work, and at once, before men did so? The obvious reason was that the brain had not yet attained a sufficiently high state of development to suggest appropriate occupation to the exclusion of their function in climbing. The gibbon and other anthropoids were "strictly bound down to experience" and had not learned "to anticipate to any extent what is going to happen," because their prefrontal brain areas were still small and relatively undeveloped. In the simian brain the sensory areas predominated and the behavior of the animal was to be looked on as the response to immediate sensory impressions of the moment. In the human brain the great association areas had grown far beyond the dimensions of the sensory areas. As soon as the evolution of the brain made it possible for the ape-man to appreciate its ability to perform and anticipate the results of skilled actions, he began to avail himself of the larger life opened to him. The erect attitude became stereotyped and the limbs specialized.

THE ACQUISITION OF SPEECH

To the memories of the sounds of other animals and of the noises that occurred in Nature the primitive ape-man added a collection of records of the expressive sounds emitted by his fellows. In course of time the consciousness of these sounds was recorded with the memories of his gestures, associating each with some meaning, which became a new way of communicating with his fellows. The perfection of the cortical mechanism for appreciating sounds and detecting a wide range of qualities was associated in the human brain with a remarkable growth and differentiation of the auditory area of the cortex. As intercommunication between members of a social group became vitally important, this acuity in recognizing sounds of different pitch, tone and timbre and in detecting their precise emotional significance, would grow *pari passu* with the acquisition of speech. The latter gave a tremendous impetus to human progress by enabling the knowledge acquired by each individual to become the property of the community to be handed on to future generations. This heritage was now so great that for the vast majority of men almost the total of their mental activities consisted in acquiring the common stock of knowledge.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Sept. 6, 1912.

Vertical and Slanting Handwriting

At the last session of the Association française pour l'avancement des sciences, the section of pedagogy took up the question of the style of handwriting to be taught in the schools and recommended slanting in preference to vertical handwriting. The latter, which has been adopted in some public schools in recent years, is condemned by hygienists as inevitably inducing incorrect posture in children and tending to produce curvature of the spine. Our old slanting handwriting, in use since the end of the sixteenth century, permits the most natural position.

Foot-and-Mouth Disease

Foot-and-mouth disease is making rapid and alarming progress, in some departments assuming proportions of a scourge. Cattle-owners steadily resist the law of July 21, 1881, which requires reports of the appearance of the disease. Such reports are seldom made. The municipal authorities do not aid the administration in its efforts to suppress all foci of disease for fear of disturbing local commerce. The appearance of the disease is carefully hidden in some places in order that these places may not lose the military maneuvers which would be held there otherwise. All these considerations render measures of hygiene and isolation difficult and facilitate the spread of the disease.

A Doctor of Medicine Convicted of Complicity in the Illegal Practice of Medicine

A court condemned a doctor of medicine attached to a fake institute to pay $40 (200 francs) fine for illegal practice of medicine. Since October, 1910, this physician has been employed by the establishment in question for $50 (250 francs) a month. The doctor testified that he did not sign the letters in regard to treatment and that his part was limited to indicating to patients by letter whether or not the treatment was indicated in their cases, and sometimes giving an opinion on the diagnosis. The court declared that it was evident that a physician under such conditions could only recommend the treatment when consulted. He did not practice medicine freely according to proper examination and control. He renounced his character of physician in order to recommend the treatment which was the object of the establishment to which he was attached. In short, he was there merely to facilitate the illegal practice of medicine.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Sept. 7, 1912.

Death of Professor Cramer

Professor Cramer, the director of the Göttingen clinic for neurology and psychiatry, died unexpectedly September 6 at the early age of 51. He was one of the most important of the younger psychiatrists. He particularly devoted himself with success to the questions of attenuated criminal responsibility and also the incidence of mental diseases among children in asylums. It was at his suggestion that at Göttingen the child wards of the state were submitted to psychiatric examinations; it was also through his efforts that an institute for nervous diseases was established near Göttingen by the authorities of the province of Hanover. Cramer joined the faculty at Göttingen as a psychiatrist in 1895 and was appointed in 1897 as extraordinary and in 1901 as regular professor. Last year he declined a call as successor of Ziehen at Berlin. His literary works are very numerous; they deal especially with clinical psychiatry. His text-book of legal psychiatry for physicians and lawyers has a wide circulation.

Prize Offered by the Berlin Society for Racial Hygiene

The Berlin Gesellschaft für Rassenhygiene announces a prize for the discussion of the question: Do material and social advancement bring dangers to families in relation to racial hygiene? In this discussion special attention shall be given to the fact that previous experience among the well-to-do, educated classes of the cities, as well as among the better situated classes of working people, indicates a marked reduction of the birth-rate, which leads to the extinction of worthy families and to the exclusion of valuable hereditary forces from our racial life. It is left to the authors whether they shall investigate the extent and cause of this phenomena and determine the conditions which influence unconsciously the fertility and quality of the families, as well as whether they shall consider the physical, genealogic, statistic or other viewpoints of the question. For the two best essays prizes of 400 marks ($100) and 200 marks ($50) are offered. Prof. von Gruber, of Munich, is one of the judges.

Limitation of Advertising of Specialists

The court of honor for the kingdom of Saxony has decided that the advertisements "specialists for external and internal tuberculosis" and "massage of nerves" are not in accordance with the principles of ethics, and therefore not permissible.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Sept. 5, 1912.

The Average Age of Marriage for Women and Men

The constant decrease in the number of births and marriages in many countries has caused much comment and speculation as to how to combat this evil. Among the results of the investigations the following figures have been ascertained for the population in the south of this country where a mixed nation is living—Italians, Slavs and a few Germans. Thirteen per cent. of the women marry before they reach their twentieth year; 36 per cent. marry from 20 to 25 years of age, a more popular age. The next lustrum or five-year period (25 to 30 years) shows only 25 per cent. of marriages, and a constant decrease is now the rule for each lustrum; 12 per cent. are from 30 to 35 years old; 6 per cent. are from 35 to 40 years; 5 per cent. marry between the ages of 40 and 45, and 1 per cent. between 45 and 50 and over. After 50 years the percentage is very low, 0.33⅓ per cent. For men a similar statistical study has been worked out but it comprises a much smaller number of investigated couples. Less than 1 per cent. of men marry below 20 years. Military regulations, apart from other reasons, prevent early marriage, for no man fit for military service may marry without special consent before having served his term, that is, before the twenty-fourth year. Men marry usually between 25 and 35 years of age. Of all married couples, the husbands in 14 per cent. of the cases founded a family between the twentieth and twenty-fifth years; in 26 per cent. between 25 and 30 years; in 24 per cent. they were between 30 and 35 years old at the time of marriage. Quite a large number, 40 per cent., marry between 35 and 40, mostly in towns; 10 per cent. are over 40 years but less than 45, while the remaining 7 per cent. are over 45 years of age when they marry. Of course, only the first marriage is taken into account.

Capital Punishment

The problem of capital punishment was the subject of debate at the German Lawyers' Congress (Deutscher Juristentag) recently held in Vienna. While some declared that capital punishment was absolutely necessary, others absolutely denied its justification. Those in favor of inflicting the death sentence held that this was the only means of saving the community from criminals like murderers, and they expected a wholesome terror to be exerted by the threatening punishment on would-be murderers. But they admitted that the chief drawback was the irreparability of an execution which might be the result of an error of justice. No religious or sentimental ideas or ideas of vengeance were admissible in the consideration, but simply the conscience of justice demanded the right to pass the death sentence in extreme cases. The opposers of capital punishment pointed out that the deterrent effect of this *ultima ratio* had not been proved. In countries where capital punishment was abolished (altogether twelve) one could not find an excess or increase of crime in comparison with other countries. They contended that the community could rid itself of dangerous criminals by lifelong imprisonment just as dangerous lunatics are made innocuous. The idea of cruelty has been abolished from modern judicature. If capital punishment should act as a deterrent it would have to be made more cruel and bloody, while on the contrary all modern punishments are governed by humanitarian ideas. Therefore the state could do without capital punishment. In special instances, as in the case of assassins of rulers, the threatening death sentence acts as an incentive for martyrdom. After a heated discussion the motion to abolish capital punishment was rejected by 150 against 158 votes and the following resolution was accepted: "The continuance of capital punishment is an expression of popular sentiment of jurisdiction. But it shall be stipulated only for the gravest cases of murder and high treason and even then its application shall be considered gravely by the judge." As the resolutions of this congress are in high degree influencing the new penal code just now in preparation in this country, the significance of the above-mentioned result of the discussion is obvious. It is strange that no medical men were asked to take part in the proceedings of the congress.

Marriages

AMOS TREVALEE BAKER, M.D., Riverdale, N. Y., to Mrs. Edna M. Pelkie of Matteawan, N. Y., in New York City, September 10.

CHARLES O. JOHNSTON, M.D., Claysburg, Pa., to Miss Margaret Della Beegle of Bedford, Pa., at Billings, Mont., September 5.

CHARLES BUSHFIELD SCHILDECKER, M.D., to Miss Edna May Wightman, both of Pittsburgh, at Corry, Pa., September 11.

ELMER E. LENHARDT, M.D., Minorsville, Pa., to Miss Anna Louise Erricson of West Pittston, Pa., September 10.

ROY CLYDE FRAVEL, M.D., Richmond, Va., to Miss Emma Calhoun Peyton of New Castle, Del., September 18.

LEON GILBERT WOODFORD, M.D., Canon City, Colo., to Miss Myrtle C. Sharpless of Everett, Wash., August 30.

GEORGE F. SAVAGE, M.D., Port Washington, Wis., to Miss Mary King of Spring Green, Wis., September 10.

CHARLES F. K. BEAN, M.D., West Medford, Mass., to Miss Amy Rider of Malden, Mass., September 16.

ELMER ANDREW MINER, M.D., Independence, Kan., to Miss Eugenia Mason of Chicago, September 19.

FLAVEL B. TIFFANY, M.D., Kansas City, Mo., to Miss Zoe Clark, at Kansas City, September 12.

MARTIN OSCAR STAUCH, M.D., Solon, Iowa, to Miss Lida Simons of Clinton, Iowa, September 3.

THOMAS DYER HENDERSON, M.D., to Miss Emma G. Housel, both of Philadelphia, September 11.

CHENEY METCALFE STIMSON, M.D., to Miss Ellen D. Dresher, both of Philadelphia, September 9.

WILLIAM SHERMAN BOUGHER, M.D., to MARION S. WALLACE, M.D., both of Chicago, August 28.

JAMES EDWARD HUBBARD, M.D., to Miss Lillian E. Godwin, both of Easton, Md., July 17.

LYLE GILLETT MCNEILE, M.D., to OLGA MURRAY, M.D., both of Los Angeles, September 7.

Deaths

Guido Bell, M.D. University of Freiberg, Germany, 1865; formerly a member of the American Medical Association; a member of the Indiana State Medical Association and Mississippi Valley Medical Association; for forty-five years a practitioner of Indianapolis; for several years corresponding editor of *Memorabilien*, a medical journal published in Heilbronn, Germany; prominent in the German charities of Indianapolis; by common consent of his confrères "the most learned physician in arts, sciences and humanities as well as in the special knowledge of his profession who had practiced in Indianapolis;" died at his home, September 13, from cerebral hemorrhage, aged 73.

Abel Huston Thayer, M.D. University of Maryland, 1876; a member of the American Medical Association and the American Association of Railway Surgeons; a veteran of the Civil War; for several years president of the Taylor County (W. Va.) Board of Health; local surgeon for the Baltimore & Ohio Railroad; for two terms a representative in the West Virginia legislature; died at his home in Grafton, September 8, aged 70.

George W. Butts, M.D. Medical College of Virginia, Richmond, 1868; of Chuckatuck, Va.; for many years a member of the board of supervisors of Nansemond County and at one time county treasurer; for eighteen years president of the board of visitors of the Deaf, Dumb and Blind Institute, Staunton; a Confederate veteran; died at the home of his daughter, in Port Norfolk, Va., September 6, from heart disease, aged 69.

Seymour David Carpenter, M.D. University of Pennsylvania, Philadelphia, 1849; a practitioner of Cedar Rapids, Iowa, from 1849 to 1862; surgeon in the United States Army and medical director of the Department of Missouri in 1864 and 1865; who, after the war, engaged in business enterprises until 1892, and was for a number of years a resident of Chicago; died in the Royal Hospital, Montreal, Que., August 29, aged 87.

George Frost, M.D. Dearborn Medical College, Chicago, 1906; of Chicago; a member of the Illinois State Medical Society; instructor in clinical surgery in his alma mater and an employee of the health department of Chicago; died in the Chicago Avenue Hospital, September 9, after an operation for malignant disease of the throat, aged 51.

Lewis Marshall McLendon, M.D. University of Mobile, Ala., 1874; a member of the Medical Association of the State of Alabama; representative from Escambia County in the last legislature, and chairman of the house committee on public health; formerly of Brewton; died at his home in Canoe, about September 9.

Francis L. Frost, M.D. Medical College of the State of South Carolina, Charleston, 1861; brigade surgeon in the Confederate service throughout the Civil War; later a member of the common council and city registrar of Charleston, S. C.; died at his home in Charleston, about September 5, from senile debility, aged 81.

James Harry Barbour, M.D. Medical College of Ohio, Cincinnati, 1852; a member of the Kentucky State Medical Association; at one time mayor of Falmouth, Ky.; surgeon of volunteers during the Civil War; died at his home in Falmouth, September 8, from senile debility, aged 88.

Adam M. Beers, M.D. University of Pennsylvania, Philadelphia, 1863; a member of the American Medical Association and American Association of Railway Surgeons; local surgeon of the Pennsylvania System at Newcomerstown, Ohio; died at his home, September 10, from heart disease, aged 71.

Leon M. Nugent, M.D. Marquette University, Milwaukee, Wis., 1908; of Wauwatosa; a member of the State Medical Society of Wisconsin; while attempting to cross the Wells street viaduct, September 7, was run down by a trolley car and killed, aged 25.

Milton Anthony Turner, M.D. Medical College of Georgia, Augusta, 1871; a Confederate veteran; for thirty-five years a practitioner of Dunbarton, S. C.; died in the City Hospital, Augusta, Ga., September 12, aged 64.

Robert M. Dawson, M.D. University of Maryland, Baltimore, 1869; died at his home in Sherwood, Md., September 8, aged 73.

John W. Nance, M.D. Medical College of the State of South Carolina, Charleston, 1900; a member of the Florida Medical Association; sheriff of Columbia County in 1908; died at his office in Lake City, September 11, from the effects of morphin, self-administered, it is believed, with suicidal intent, aged 41.

Augustine Perkins, M.D. Rush Medical College, 1876; a pioneer oculist and aurist of Colorado, and one of the charter members of the Colorado Physicians' Society; died at the home of his daughter in Denver, September 10, from senile debility, aged 72.

William R. Osborn, M.D. Cincinnati College of Medicine and Surgery, 1874; for several years surveyor of Dubois County, Ind.; a veteran of the Civil War; a practitioner of Spurgeon; died at the home of his daughter in Petersburg, Ind., September 8, aged 73.

William H. Loughhead, Jr., M.D. University of Buffalo, N. Y., 1891; a member of the Medical Society of the State of New York; of Andover; died in St. James Mercy Hospital, Hornell, N. Y., September 12, after an operation for appendicitis, aged 52.

Frederick W. Davis, M.D. Western Reserve Medical College, Cleveland, 1882; a member of the American Medical Association; secretary of the Cleveland Academy of Medicine; died suddenly at his home, September 13, from acute gastritis, aged 59.

Stillman J. Quinby, M.D. New York University, New York City, 1860; of Omaha; major and surgeon of volunteers throughout the Civil War; died at the home of his sister in Lynn, Mass., September 7, from senile debility, aged 79.

Felix A. Bryan, M.D. Meharry Medical College, Nashville, Tenn., 1902; president of the Lone Star State Medical Association and a prominent colored physician of Texas; died at his home in Dallas, September 11.

Charles Glen Criser, M.D. University College of Medicine, Richmond, Va., 1899; a member of the Medical Society of Virginia; died in his home in Warm Springs, August 18, from cerebral hemorrhage, aged 41.

George Burton Andrews, M.D. University of Vermont, Burlington, 1886; at one time a member of the staff of the Central Maine General Hospital; died at his home in Auburn, Me., August 31, aged 50.

Raleigh H. Hightower, M.D. Southern College of Eclectic Medicine and Surgery, Atlanta, Ga., 1890; a Confederate veteran; died at his home in White House, near McDonough, Ga., September 8, aged 73.

Charles W. Allen, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1868; surgeon in the Confederate service during the Civil War; died at his home in Bedford, Mo., September 1, aged 76.

Charles Henry Brueckner, M.D. College of Physicians and Surgeons, Baltimore, 1901; died at his home in Newark, N. J., June 24, from peritonitis following a rupture of the gallbladder, aged 36.

Robert O. Wozencraft (license, Arkansas, 1903); of Princeton, Ark.; a member of the American Medical Association; died in a hospital in Little Rock, September 1, aged 30.

S. P. Jones (license, exemption certificate, Minnesota, 1883); of Eagle Lake; died in Immanuel Hospital, Mankato, September 14, from cerebral hemorrhage, aged 82.

George D. Fitch, M.D. New York University, New York City, 1860; formerly of Philadelphia; died at the home of his sister in South Jersey, August 20.

Bennett Eli Bean, M.D. Bellevue Hospital Medical College, 1872; died at his home in North Middletown, Ky., September 11, from heart disease, aged 70.

Clarence Stanley Hunter Darlington, M.D. University of Buffalo, N. Y., 1902; of Oklahoma, Okla.; died in Buffalo, N. Y., August 18, aged 33.

George David Rich, M.D. American Medical College, Eclectic, St. Louis, 1897; formerly of Imperial, Cal.; died in Petaluma, Cal., August 15, aged 41.

Edouard Napoleon Fugere, M.D. Lavel University, Quebec, 1890; of Manchester, N. H.; died in McGregorsville, N. H., August 29, aged 47.

Alfred L. Rizer, M.D. Detroit (Mich.) Medical College, 1876; died at his home in Canton, Ohio, September 6, aged 68.

S. C. Franks (license, Iowa, 1887); of Farmington, Iowa; died at his home, September 5, aged 74.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

PERUNA REDIVIVUS

Old Style Peruna Now Sold as Ka-tar-no

Six years ago Peruna was sold by car-load lots where it is now sold by the case. The reason is that, as now manufactured, it cannot be used as an alcoholic beverage. In 1906, the Peruna company was notified that it either must put some medicine in its "booze" or it could be sold only in saloons or other places carrying liquor licenses. The company thus found itself between the devil and the deep blue sea. If it left its nostrum as it was, it could only be sold by one who held a retail liquor dealer's license; this, of course, would at once make its real character evident to the purchaser. If, on the other hand, appreciable quantities of drugs were put into the stuff it would spoil its sale as a beverage. Evidently believing that the preparation was so popular that nothing could hurt its sale materially, the company chose the latter course. A laxative was added and Peruna was still permitted to be sold as a medicine.

Incidentally, the public was not given the real reason for the change in Peruna's make-up. The excuse offered by Hartman—who is the Peruna company—was:

"For a number of years requests have come to me from a multitude of grateful friends, urging that Peruna be given a slight laxative quality."

The results of the change were what might have been expected. Those who had been taking their toddy in the form of old-style Peruna found themselves in for a bad quarter of an hour when they attempted to obtain the accustomed stimulation from the modified Peruna, to which a laxative had been added. The sale of Peruna diminished enormously. Now we learn from the newspaper advertisements that the old-time Peruna is again on the market under the name Ka-tar-no. A booklet is issued giving some of the alleged reasons for the resurrection of the old Peruna. With the "patent-medicine" makers' belief that the public soon forgets and is easily fooled it is now frankly admitted that the reason for the change in the Peruna formula was, to use the company's own words, because "the government decided that Peruna contained too great a percentage of alcohol and too small a percentage of other drugs to protect it from misuse among people inclined to use alcoholic beverages." To quote further from Hartman's interesting and amusing booklet:

"Dr. Hartman has always been a strict temperance man himself, and when the government proposition was made to him that he must either manufacture and sell Peruna as an alcoholic beverage or change the formula he was shocked beyond all measure. . . . He could not bring himself to engage in anything that looked like liquor traffic."

In spite of the fact, however, that "a multitude" of Dr. Hartman's "grateful friends" had desired the change in the Peruna formula it seems that there was even a greater multitude that objected to it, for we learn:

"Ever since the new Peruna was offered thousands of people who had used Peruna as a family medicine for many years began to complain of the change. . . . The new taste acquired by additional drugs, the new effect that the drugs produced, was all strange and caused them to hesitate and some of them to be actually afraid to use it. Thus it was that the sale of the new Peruna fell below the sale of the old Peruna."

The many requests for the old-style Peruna—combined doubtless with the diminishing sales of the new Peruna—have had their effect on Dr. Hartman even though he is "a strict temperance man" and "was shocked beyond measure" by the government's demand that he put medicine in his preparation

"The continuous requests of such a multitude of people have caused him to relinquish in so far that he allows the old Peruna (now called Ka-tar-no) to be manufactured and sold as an alcoholic beverage."

If the idea is to recuperate the failing fortunes of Peruna, we predict that it will fail. In the first place, Ka-tar-no cannot be sold except by those who hold a liquor dealer's license. This means that those who, in the past, honestly believed that Peruna had a physiologic action other than that due to alcohol will now know better. Those, on the other hand, who used to purchase Peruna because they wanted alcohol but preferred it in the form of "patent medicine" rather than whisky, will be unwilling to go to the saloon or retail liquor dealer for their toddy. The attempt to resurrect the old Peruna is foredoomed to failure. Those who are honestly opposed to the use of alcohol will not purchase it; those who use alcohol surreptitiously will hesitate to go into a saloon for their "medicine;" those who want alcohol and frankly admit it can buy, for less money, a better grade of whisky than Ka-tar-no.

Correspondence

Look Out for Dr. Ludwig Braun

To the Editor:—About the middle of August a man representing himself to be Dr. Ludwig Braun came to Galveston. He said that he had been demonstrator of pathology in McGill University, which Dr. Adami denies; that he was in the employ of the U. S. Navy, which Surgeon-General Stokes denies; and he was guilty of misrepresenting facts in a number of other instances. After mutilating a valuable book in our medical library, he disappeared, leaving some unpaid bills. If you think best this information might be published for the protection of others. He said he was on the way to Buenos Aires. He is a short, heavy-set, round-faced, smooth-shaven German who talks a great deal. If you should learn of his whereabouts we would be glad to know of it.

JAMES J. TERRILL, Galveston, Texas,
Professor of Pathology, Medical Department, University of Texas.

[COMMENT.—In 1910 a Dr. Ludwig Braun was tried and convicted of stealing microscopes and other instruments from physicians of Vancouver, B. C., and was sent to prison for one year. The man said that he had done work in McGill University and that he was a graduate of a medical school in Vienna. The name and the similarity of the assertions and actions make it seem probable that the Dr. Ludwig Braun of both reports is one and the same person. The chances are that Ludwig may turn up almost anywhere and indulge in some of his little eccentricities. Therefore it might be well for physicians to be on the lookout for him.

Later: Since the above went on the press, information is received that a Dr. Ludovic Braun, said to be a Russian doctor, but doubtless the same man referred to above, has been arrested at Corpus Christi, Texas, on a charge of stealing medical instruments from Dr. W. N. Wardlow. Braun was reported to be in the county jail, having acknowledged the charge. It was further stated that the government wants him on the charge that he impersonated a U. S. government officer.—EDITOR.]

Harrar's Views on Puerperal Infection

To the Editor:—In the article on "Puerperal Infection" by me in THE JOURNAL (Aug. 31, p. 703), I misquote James A. Harrar. The quotation should read: "Harrar does not advocate intra-uterine douches in puerperal infections with streptococci or the colon bacillus. In cases of infection with other organisms he believes douches may have some value."

THOMAS J. WATKINS, Chicago.

Fatigue and Sleep.—Athletes find that repose without sleep best relieves fatigue after prolonged strain. The reason for this is that the internal secretion antidote to fatigue-products is more rapidly formed during waking hours and more freely supplied to the muscles when the blood is not accumulated in the splanchnic area.—*St. Louis Med. Rev.*

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

LITERATURE ON PELLAGRA AND HOOKWORM

To the Editor:—I wish to obtain a few articles on the etiology, symptoms and treatment of (1) pellagra and (2) hookworm disease.
E. S. COSTER, M.D., Solomons, Md.

ANSWER.—The literature on pellagra is extensive. A full bibliography of the subject was published in THE JOURNAL, Nov. 13, 1909, p. 1657. To this may be added the following recent articles:

Silver, D. R.: Corn and Pellagra, THE JOURNAL, Feb. 5, 1910, p. 452.
King, H. D.: The Etiologic Controversy Regarding Pellagra, THE JOURNAL, March 12, 1910, p. 859.
Delcourt, A. J.: Pellagra, THE JOURNAL, April 2, 1910, p. 1121.
Cole, H. P., and Winthrop, G. J.: Pellagra; Transfusion in Eleven Cases, THE JOURNAL, April 23, 1910, p. 1354.
Long, J. D.: Pellagra, THE JOURNAL, Aug. 27, 1910, p. 734.
Bass, C. C.: Climatic Treatment of Pellagra, THE JOURNAL, Sept. 10, 1910, p. 940.
Discussion on Pellagra, St. Louis Session of the A. M. A., THE JOURNAL, Jan. 28, 1911, p. 251.
Cole, H. P.: Transfusion in Pellagra: A Review of Twenty Cases, THE JOURNAL, Feb. 25, 1911, p. 584.
Nice, C. M.: Pellagra Treated with Salvarsan, THE JOURNAL, March 25, 1911, p. 896.
Roberts, S. R.: Sambon's New Theory of Pellagra and Its Application to Conditions in Georgia, THE JOURNAL, June 10, 1911, p. 1713.
Cole, H. P.: Status of Salvarsan in Pellagra, Based on Twenty-One Cases, THE JOURNAL, June 17, 1911, p. 1794.
Niles, G. M.: The Dietetic Management of Pellagra, THE JOURNAL, Oct. 28, 1911, p. 1430.
King, P. M., and Crowell, A. J.: Pellagra Treated with Salvarsan: Report of Nineteen Cases, THE JOURNAL, Nov. 18, 1911, p. 1687.
Bass, C. C.: Pellagrous Symptoms Produced Experimentally in Fowls by Feeding Maize Spoiled by Inoculation with a Specific Bacterium, THE JOURNAL, Nov. 18, 1911, p. 1684.
Beall, K. H.: Etiology of Pellagra, THE JOURNAL, Nov. 18, 1911, p. 1683.
Pellagra, THE JOURNAL, Dec. 9, 1911, p. 1940.
Cranston, W. J.: Salvarsan in Pellagra, THE JOURNAL, May 18, 1912, p. 1509.
Knight, I. E.: Ten Pellagrins in One Family, THE JOURNAL, June 22, 1912, p. 1940.

Two valuable books have been published on this subject:

Marie, A.: Pellagra, The State Company, Columbia, S. C.; price, $2.50.
Niles, G. M.: Pellagra, W. B. Saunders Company, Philadelphia; price, $3.

2. Like pellagra, the subject of hookworm disease is treated in an extensive literature. We give below a list of original articles appearing in THE JOURNAL from 1908 to the present time:

Leidy, J.: Ankylostoma Duodenale, THE JOURNAL, June 5, 1909, p. 1832.
Ashford, B. K., and Igaravidez, P. G.: Summary of a Ten Years' Campaign Against Hookworm Disease in Porto Rico, THE JOURNAL, May 28, 1910, p. 1757.
Lindeman, E. E.: Treatment of Hookworm Disease, THE JOURNAL, May 28, 1910, p. 1765.
Litterer, W.: The Non-Oviparous Female Hookworm, THE JOURNAL, Oct. 15, 1910, p. 1378.
Gunn, H.: Hookworm Disease in Mines of California, THE JOURNAL, Jan. 28, 1911, p. 259.
Strosnider, C. F.: Hookworm Disease, THE JOURNAL, April 8, 1911, p. 1024.
Ankylostomiasis, Uncinariasis or Hookworm Disease, Therapeutics in THE JOURNAL, April 15, 1911, p. 1107.
Endicott, E. E.: My Experience with Hookworm Infection in the Deep Gold Mines of California, THE JOURNAL, Sept. 30, 1911, p. 1106.
Schultz, W. H.: Eucalyptus and Chloroform in Hookworm Disease, THE JOURNAL, Sept. 30, 1911, p. 1104.
Gunn, H.: Hookworm Disease in California; Its Importation, Dissemination and Prevention, THE JOURNAL, Sept. 30, 1911, p. 1107.
Fraser, T.: Mild Cases of Hookworm Disease in Children, THE JOURNAL, Sept. 2, 1911, p. 791.
Bozzolo, C.: Treatment of Hookworm Disease with Thymol, THE JOURNAL, June 8, 1912, p. 1744.
Report on Hookworm Eradication, Editorial, THE JOURNAL, June 22, 1912, p. 1946.
Dorsett, T. W.: Syphilis Complicated with Uncinariasis, THE JOURNAL, Aug. 10, 1912, p. 443.

Good books on the subject are as follows:

Dock, George, and Bass, Charles C.: Hookworm Disease, C. V. Mosby Company, St. Louis; price $2.
Hookworm Disease, prepared under the direction of the State Board of Health of Florida, by Dr. Hiram Byrd, Assistant State Health Officer.
See also Public Health Bulletin No. 32, Public Health Service of the United States.

SIGNED NEWSPAPER ARTICLES INEXPEDIENT FOR A PRACTITIONER

To the Editor:—The editor of a local newspaper in a city of about 20,000 urged me to write some popular articles on the more common diseases for publication in his paper. I prepared a few articles and they appeared as written "by a well-known physician of the town." The editor insists that I sign the articles, but I hesitate to do this because of the danger of being accused of notoriety-seeking. What shall I do? Sign them or not? T. S.

ANSWER.—A practicing physician signing his name to popular articles on medical subjects published in his local newspapers would subject himself to criticism. Our correspondent answers his question in acknowledging that a signature would make the author liable to the charge of seeking notoriety, and of using a "special privilege" for the purpose of soliciting patients. Whatever added value, in the judgment of the editor, a signature may give the communication is more than balanced by the possible misunderstanding of the author's motive on the part of the public, as well as of his professional confrères. Under these conditions, the physician-author pays too much for a whistle for the newspaper editor to blow.

When the author is "not in practice" and when the article is published in a paper distributed over a large territory, a signature and a list of degrees may be used with the article, as they do not rouse the suspicion they engender when one whose living is obtained from the practice of medicine signs the article.

THE VON PIRQUET TEST

To the Editor:—The statement was made that the von Pirquet test for tuberculosis is unreliable and has been abandoned. In a case in which the cause of a continued fever is very obscure, and the reaction is positive, would it be consistent to base the diagnosis on a positive reaction? H. L. WILDER, M.D., Glen Rose, Texas.

ANSWER.—The reason for the unreliability of the von Pirquet test is that it does not distinguish between active and latent tuberculosis. Therefore, when applied to adults, the majority of whom have survived an infection with tuberculosis of some sort, it fails to indicate an active disease. A latent focus of tuberculosis anywhere in the body may cause a positive reaction, although this focus may have no relation to the disease that is causing the symptoms from which the patient may be suffering. Consequently, while the von Pirquet test in a positive reaction may be said always to indicate the presence of tuberculosis, it gives us in many cases no information which can be used in determining the cause of the present condition. In the case referred to by our correspondent it would not be safe to base a diagnosis of active tuberculosis on a positive reaction.

THYMUS SUBSTANCE IN RHEUMATISM

To the Editor:—Can you tell me anything about the efficacy of thymus substance in rheumatoid arthritis?
WALTER E. VEST, M.D., Meherrin, Va.

ANSWER.—The use of thymus gland is still in the experimental stage. The latest expression of pharmacologists regarding it is that its employment has not yet been sufficient to justify any positive statement as to its therapeutic value.

To the Editor:—Has any literature appeared recently on the use of thymus gland in chronic rheumatism or arthritis deformans?
M. K. HENRY, M.D., Philadelphia.

ANSWER.—The following articles may be referred to:

Gwyer, F.: Thymus Gland Treatment of Certain Diseases, *New York Med. Jour.*, Feb. 19, 1910; abstr. in THE JOURNAL, March 5, 1910, p. 816.
Nathan, P. W.: A New and Apparently Successful Method of Treating Metabolic Osteo-Arthritis, THE JOURNAL, June 17, 1911, p. 1779

POSLAM

To the Editor:—I have been asked to give the formula or contents of Poslam. Can you enlighten me? E. W. A.

ANSWER.—Poslam was discussed in THE JOURNAL (May 22, 1909, p. 1678), and the matter has been reprinted in "Nostrums and Quackery." From an examination made in the Association's laboratory, it was concluded that the composition of Poslam was essentially:

Zinc oxid	12.01 parts
Sulphur	6.67 parts
Corn-starch	22.00 parts
Tar-oil	15.18 parts
Menthol, Salicylic acid }	Small quantity of each.
Fatty base q.s.	100.00 parts

LITERATURE ON TRACHOMA

To the Editor:—Kindly give me references to any recent literature on trachoma. POLK RICHARDS, White Earth, Minn.

ANSWER.—By consulting THE JOURNAL indexes for the last three years our correspondent will find the following articles:

Stuart, C. C.: Trachoma in its Sociologic Aspect, *Ohio State Med. Jour.*, December, 1908.
Franklin, C. P.: Trachoma and the Public Weal, *Pennsylvania Med. Jour.*, February, 1909; abstr. in THE JOURNAL, Oct. 17, 1908, p. 1357.
Coover, D. H.: New Operative Procedure in Treatment of Trachoma, *Ophth. Rec.*, February, 1909; abstr. in THE JOURNAL, March 27, 1909, p. 1064.
Greeff: Germ Causing Trachoma, *Deutsch. med. Wchnschr.*, March 28, 1909, No. 12; abstr. in THE JOURNAL, May 1, 1909, p. 1466.
Tull, F. H.: Trachoma, *Jour. New Mexico Med. Soc.*, July, 1909.
Pusey, B.: "Trachoma Bodies" Possibly the Etiologic Factor of Trachoma, *Quart. Bull. Northwestern Med. School*, June, 1909; abstr. in THE JOURNAL, Aug. 7, 1909, p. 488.
Sisson, E. O.: Etiology of Trachoma, *Denver Med. Times and Utah Med. Jour.*, October, 1909.
White, D. W.: Trachoma, *South. California Pract.*, November, 1909.
Joyes, C.: Trachoma, *Texas State Jour. Med.*, November, 1909.
Woodson, J. M.: Treatment of Chronic Trachoma, *Texas State Jour. Med.*, November, 1909.
Goldbach, L. J.: Trachoma, *New York Med. Jour.*, Dec. 25, 1909.
Benson, A. H.: Trachoma, *Dublin Jour. Med. Sc.*, January, 1910.
Wylie, C. B.: Trachoma, *Jour. Tenn. State Med. Assn.*, February, 1910.
Wootton, H. W.: Surgical Treatment of Trachoma by the Combined Excision of Heisrath and the Tarsal Resection of Kuhnt, *Arch. Ophthal.*, March, 1910.
Franklin, C. P.: What Shall We Do About Trachoma? *Penn. Med. Jour.*, June, 1910; abstr. in THE JOURNAL, Oct. 23, 1909, p. 1424.
Hornback, E. T.: Treatment of Trachoma, *St. Louis Med. Rev.*, June, 1910.
Martin, H. H.: Trachoma Treated After the Coover Method, *Ophthalmology*, January, 1911; abstr. in THE JOURNAL, Jan. 28, 1911, p. 305.
Brav, A.: Are We in Danger of Trachoma? *New York Med. Jour.*, March 4, 1911; abstr. in THE JOURNAL, March 18, 1911, p. 847.
Harrison, W. H. and White, D. W.: Management and Treatment of Trachoma Among Indians, *Jour. Ophth. and Oto-Laryngol.*, April, 1911.
Sattler, C. H.: Etiology of Trachoma, *Med. Klin.*, April 9, 1911.
Green, J.: Menace to Eyesight From Trachoma, *Jour. Missouri Med. Assn.*, October, 1911, No. 4.
Caldwell, R.: Surgical Treatment in Trachoma, *Jour Ark. Med. Soc.*, September, 1911, No. 4; abstr. in THE JOURNAL, July 8, 1911, pp. 156-157.
Safford, M. V.: Trachoma, *Med. Rec.*, Nov. 11, 1911.
Williams, A. W.: Significance of Group of Hemophilic Bacilli in Conjunctivitis, Especially in Trachoma, *New York Med. Jour.*, March 16, 1912; abstr. in THE JOURNAL, March 30, 1912, p. 975.
Stewart, J. H.: Trachoma, *St. Paul Med. Jour.*, May, 1912, No. 5.
Causative Organism of Trachoma, Editorial, THE JOURNAL, June 22, 1912, p. 1947.

Miscellany

Outdoor Classes for Tuberculous Children

The nation-wide campaign against tuberculosis has perhaps put undue emphasis on the treatment and cure of the disease at the expense of its prevention. None the less, prevention of tuberculosis is now receiving its merited attention. F. C. Smith ("Relation of Climate to Treatment of Pulmonary Tuberculosis," Public Health Bulletin No. 35, 1910) has summarized the important factors in promoting recovery from tuberculosis under the heads of (1) adequate and intelligent rest, (2) proper and sufficient food, (3) abundance of pure air, which, taken all together under skilled medical direction, constitute a well-ordered hygiene. These factors are equally applicable to the prevention of tuberculosis, and serve to demonstrate that the therapeutic and prophylactic measures are the same. The difference arises in the individual to whom the measures indicated are applied.

Probably no more important application of the principles outlined in the prevention of tuberculosis can be made than in the case of children, especially children from tenement districts. Here it is most difficult to secure even one of the essential desiderata of good food, rest and pure air. From the eugenic point of view such work is of the highest value, not alone with reference to tuberculosis of the skin, glands, bone, lungs, etc., but also in developing strong, sturdy adults. The anemic, stunted child of the tenements is predisposed to many diseases beside tuberculosis, and if he reaches maturity his offspring will receive a serious hereditary handicap.

Recognizing the truth of these considerations, and the pressing necessity of the problem involved, the Committee on the Prevention of Tuberculosis of the Charity Organization Society of New York City (as described in its bulletin "Fresh-Air Classes," New York, April, 1912), has organized and assisted in the maintenance of fresh-air classes in the public schools in cooperation with the Department of Education. As a result of the activity of this committee there are now eight fresh-air classes in the public schools of Manhattan and the Bronx. In some of these the roof is utilized, in others an adjoining park pavilion; the rest making use of class-rooms in the school buildings, which have been suitably altered.

The Board of Education provides the meeting-place for each class and an equipment of movable desks and seats. In addition it furnishes each child a "sitting-out bag," a sweater, cap, a pair of mittens, a pair of felt shoes and a reclining chair. This individual equipment costs $8.30 for each child. It belongs to the school and is passed from one child to another, of course after proper disinfection. Each outfit is numbered so that each child has his own articles as long as he is in the class. These outfits when not in use are kept in sanitary lockers in the class-room. The Board of Education also supplies an anthropometric scale costing $19 for each class.

The Committee on the Prevention of Tuberculosis assumes the responsibility for feeding the children. It has been sought to determine whether the remarkable results obtained were due to the fresh air or the feeding or to both. To this end two classes were conducted under each of the following plans:

1. A hot lunch is furnished at noon, and in addition milk and crackers both morning and afternoon.
2. Lunch only but no milk either morning or afternoon.
3. Milk only both morning and afternoon, the children bringing their own lunch or going home for it.

In addition one class received no food at all, the children bringing their lunch or going home for it. The comparative results of these plans will be tabulated shortly.

The cost of feeding is 17 cents a day per child for a hot lunch, and milk both morning and afternoon. The hot lunch alone costs about 10 cents a day per child. After the midday lunch, a rest of three-fourths of an hour is required, during which most of the children sleep.

The following plan is followed in selecting the children for the fresh-air classes. The physician of the committee picks out all the anemic-looking children from the entire school. Of these about forty are selected who show the greatest percentage below proper weight for height. Twenty-five of these are chosen for the fresh-air classes on the basis of a hemoglobin test. After securing special permission, the selected children are carefully examined for carious teeth, enlarged tonsils or lymphatic glands and adenoids. A record is also made of the blood-pressure and an accurate weekly weight chart is kept.

Striking results have been obtained in the first year of the system. Physical and mental improvement was the rule. In one class over half the children advanced in their school work faster than the normal rate. Control examinations showed marked physical gains of the fresh-air children as compared with children of apparently the same type in the regular classes.

The successful management of fresh-air classes as outlined is an excellent illustration of the beneficent results of the application of modern medical science to practical hygienic and eugenic problems.

Brevity in Medical Writing.—It is wonderful what an effect on medical science a few pages of sound medical observation has had. Goulard's little volume consists of not more than thirty duodecimo pages; Kane's account of substitution products, which initiated the whole industry of synthetic products, is a short paper; Bodington's pamphlet on the treatment of consumption is of 100 pages; M'Keever described his removal of 21 inches of the ileum in an equal number of octavo pages; Waller's description of diapedesis is told in a few pages; and the brevity of Erb's great pamphlet on "Traumatic Peripheral Paralysis" is a surprise to almost every reader who indulges in the luxury of reading monographs.—*Dublin Journal of Medical Sciences.*

Society Proceedings

COMING MEETINGS

Amer. Assn. for Study, etc., of Infant Mortality, Cleveland, Oct. 2-5.
American Association of Railway Surgeons, Chicago, Oct. 16-18.
Assn. of Military Surgeons of the United States, Baltimore, Oct. 1-4.
Clinical Cong. of Surgeons of North America, New York, Nov. 11-16.
Delaware State Medical Society, Wilmington, Oct. 8.
Indiana State Medical Association, Indianapolis, Oct. 9-11.
Kentucky State Medical Association, Louisville, Oct. 29-31.
Medical Association of the Southwest, Hot Springs, Ark., Oct. 8-10.
Mississippi Valley Medical Association, Chicago, Oct. 22-24.
National Association for Study of Pellagra, Columbus, S. C., Oct. 3-4.
Nevada State Medical Association, Reno, Oct. 8-10.
Southern Medical Association, Jacksonville, Fla., Nov. 12-14.
Vermont State Medical Society, Montpelier, Oct. 10-11.
Virginia Medical Society, Norfolk, Oct. 22-25.

INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY

Fifteenth Meeting, held at Washington, D. C., Sept. 23-28, 1912

The President, DR. HENRY P. WALCOTT, Massachusetts, in the Chair

SEPTEMBER 23, 1912—GENERAL MEETING

The congress met in general session in the Continental Memorial Hall at 11:10 a. m. Notwithstanding the inclement weather, the hall, which has a seating capacity of approximately 2,000, was filled.

The official representatives of many foreign countries occupied seats on the platform.

President Walcott delivered the opening address, which will appear in THE JOURNAL, October 12.

Address of President Taft

In introducing the Hon. William H. Taft, President of the United States, President Walcott stated that, for the first time in the history of these congresses, the chief magistrate of the nation that is host is himself a member and is willing to assume a part of the responsibility of this great gathering.

When President Taft arose to speak he received an enthusiastic ovation, the audience standing and cheering him for some minutes. When quiet was restored, he spoke as follows:

Mr. President and Members of the Fifteenth International Congress on Hygiene and Demography, Ladies and Gentlemen:

It is my pleasant and honorable duty, on behalf of the people and Government of the United States and by the direction of Congress, to welcome this great convention to Washington. Prevention is better than cure. The science of medicine and surgery has made wonderful growth in the last forty years, but in that time it would seem as if the science of sanitation, hygiene and preventive medicine had come into being from nothing. Now, all prevention and cure comes from the intense energy, industry, application, keen discrimination, and the high enthusiastic aims of the benefactors of human kind who are now devoting their lives to research and to the investigation of the causes of disease, its transmission, and its antidotes and who are proceeding *pari passu* with such rapidity and success, that we must expect to find the fountain of youth and perpetual life which was sought for in this country by some of the earlier discoverers.

A NATIONAL DEPARTMENT OF HEALTH NEEDED

We need to develop under governmental auspices a bureau or a department in which the funds of the government shall be expended for research of every kind useful in the practice and enforcement of hygiene and preventive medicine. That something of this sort may grow out of the present United States Public Health Service there is reason to believe, but it will need far greater appropriations and a widening of its scope of duties before it shall have filled the place that the medical profession of this country has a right to expect the general government to create in the progress of hygiene and demography.

Our responsibilities in Cuba, Porto Rico and the Philippines, and now on the Isthmus of Panama, have so enlarged our knowledge of the possibilities of successful sanitation under the most burdensome conditions, and have so impressed both professional men and the laymen, at all familiar with the conditions, with the necessity for more rigid and comprehensive health laws and a stricter enforcement of them for the general good, that if the Spanish War resulted in nothing else, it was worth a great deal more than its cost in this useful development of one of the most important functions that modern government has to discharge, as well as making clear the need of an additional branch of general education in the matter of hygiene of the home and the individual.

It would seem as if the tropics were the proper place for beginning a crusade on this subject. Nature is more rapid in its growth, not only in vegetable and animal life, but in the diseases of that zone. When we first went into the Tropics, our purpose was to make that region habitable for white people. We have demonstrated that as a possibility. Now we have gone beyond the mere provision for those who come from the Temperate Zone, and we are engaged in developing the tropical races into a strength of body and freedom from disease that they have never had before.

I speak of this with considerable emphasis because I have had personal experience. I have traveled through the Philippines and drank the water which seemed so sweet and cold, and then came out and found myself a perfect zoologic garden in the number of various animals described by Latin names of which I was the custodian. (Laughter.)

THE PROBLEM OF EDUCATING DEPENDENT PEOPLES

Of course, the problem of enforcing health regulations against the will of ignorant people, whose natural laziness and resentment makes enforcement most difficult, requires a strong government, and the reason is found in taxation to maintain an adequate health police service. These are problems in the Tropics that our governments must meet. There is no difficulty in running a government if you limit its functions to the mere matter of preserving peace and the administration of justice, but if you propose to add to this adequate systems of education, government hygiene and other internal improvements, you must look about for sources of revenue which are not always forthcoming, and the absence of which retards progress in the interest of the people.

If the government is to be more or less popular, the people themselves must be educated, they must understand the importance of hygienic restrictions, to accept them and to impose on themselves the burden of taxation which is essential in order that progress shall be made at all.

GREAT STEPS FORWARD IN TROPICAL HYGIENE

I consider it a proud record of the American Army that, through its medical corps engaged in hygienic work in the Tropics, so many important discoveries as to the transmission of disease and the methods of stopping its spread have been given to the world, and all of this has dated chiefly from the time of the Spanish War. (Applause.)

The elimination of small-pox by thorough vaccination; the study of bubonic plague, its mode of transmission, suppression, its cause and method of treatment; the study of cholera and its method of treatment; the study of beriberi and its method of prevention, which has not been satisfactory; the learning of the cause of yellow fever and its transmission by the mosquito, and its method of treatment; the minimizing of the bad effects of malaria by the destruction of the mosquito, which carries its poison; the ridding of the race of hookworm, which demoralizes and tends to physical degeneration, and the prevention of typhoid fever by inoculation—all constitute great steps forward in the treatment of diseases, though most of them are especially formidable in the Tropics, and also in the Temperate Zone, but in the discoveries that have been made it is satisfactory that our American physicians have taken and are taking a most important and honorable part. (Applause.)

It is very certain that but for those discoveries the construction of the Panama Canal, which now since 1904 has been going on with giant strides, and which will be completed within a year, would have been impossible. The French government, I believe, would doubtless have been successful in

building the canal but for the problems of hygiene which the science of that day had not enabled them to do. The chief health officer of that strip of ten miles has enabled 50,000 people to live healthy lives and to carry on the work of building this great canal, and he should share with the chief engineer the honors that shall crown this great achievement. (Applause.) The possibilities of improvement of tropical countries through governmental hygiene are so great that it makes one who has any conception of what they are grow enthusiastic in the contemplation of what centuries may bring forth in this regard.

VALUE OF THIS CONGRESS

I cannot conceive of any congress of more useful character than the one which it is my honor to welcome. It is useful, because a comparison of the ideas and the discoveries and the theories of men engaged in the same hunt for the truth, and in the same delving into the mysteries of Nature, with a view to detecting her secrets in the matter of the cause and cure of disease, must result in a general benefit to all who partake in such a congress. The science of hygiene and sanitation and demography must be given an impetus the world over by the temporary concentration in close quarters of men from all the world, who have been giving their lives to the same problems.

It is delightful to contemplate this phase of the congress, because it is one of those shining instances of world-wide organization for the promotion of the peaceful arts, of which I am glad to say the number is growing every year, and in which the common interest of humanity is made conspicuous by contrast with the selfishness of each nation in the conflict of interests that are typified by our burdensome and ever increasing preparations for war. (Loud applause.)

Such congresses cannot but make for the permanence of peace. They must create a deeper love in man for man. They do stir up in the membership of such a congress, having representation from all the world, a greater human sympathy, and offer to the scientific student who is willing to devote his life to the development of a truth that shall add to the health and comfort and happiness of his fellows, a reward that cannot be measured in money, but is to be found only in the consciousness of the highest duty well done. But while these things are true with respect to the world effect of such a congress, its local influence on a country like the United States is much more marked and important in the impetus that it gives to all who are responsible for the health of the community, either in their professional or by reason of their official and governmental responsibility. They must have in such a meeting as this their ideas and their knowledge, and they must derive inspiration for better and more enthusiastic work from the commingling of the greatest scientists of the world here, and their exchange of views and from the very energizing atmosphere of the congregation. I should think such a congress as this would increase the number of novitiates for the profession of medicine and surgery.

Within the last decade or so no profession has shown greater improvement; no profession has done more for the improvement and for the promotion of health and the comfort of mankind than the medical profession.

I congratulate the medical profession of the United States on this great congress which is meeting here.

Ladies and Gentlemen of the Fifteenth International Congress on Hygiene and Demography, I welcome you to America; I welcome you to Washington, and I sincerely hope that your stay here may be as pleasant and agreeable as I am sure it will be useful to this country and to the world. (Loud applause.)

The Foreign Official Delegates

At the conclusion of President Taft's address, the secretary-general, Dr. John S. Fulton, called the roll, and the following official delegates responded for their respective countries:

ARGENTINA—Dr. Juan G. del Castillo.
AUSTRIA-HUNGARY—Dr. Arthur Schattenfroh, Vienna; Prof. Francis Tangl, University of Budapest.
BELGIUM—M. Veighe, Director-General of the Administration of the Service of Health and Hygiene.
BRAZIL—Dr. Alfredo da Graca Couto, Rio de Janeiro.
CANADA—Dr. Frederick Montizambert, Director-General of Public Health.
CHILE—Fleet-Surgeon Major Alberto Adriasola.
COSTA RICA—Dr. Calvo.
CUBA—Dr. F. Torralbas, Havana.
DENMARK—Dr. A. C. J. Bornemann.
DOMINICAN REPUBLIC—Dr. M. Francisco J. Peynado, Envoy Extraordinary and Minister Plenipotentiary.
FRANCE—M. Emile Kern.
GERMANY—Dr. Rubner, Director of the Physiologic Institute, University of Berlin.
GREAT BRITAIN—Dr. Theodore Thomson, Local Government Board, London.
GREECE—Dr. L. L. Caftanzoglu.
GUATEMALA—Senor don Joaquin Mendez.
HAITI—Don Solon Menos, Envoy Extraordinary and Minister Plenipotentiary.
HOLLAND—Dr. M. W. Pynappel, Chief Inspector of Public Hygiene.
ITALY—Prof. L. Pagliani, University of Turin.
JAPAN—Mr. Seiji Tsukamoto, Counsellor of the Department of the Interior.
MEXICO—Dr. Eduardo Licéaga, Mexico City.
NORWAY—Prof. Axel Holst, University of Christiania.
RUSSIA—M. Zort, Councillor of the State and Physician of the General Staff of the Chief of Brigade of Ships of the Line of the Baltic Sea Squadron.
SIAM—Prof. Paul G. Woolley, Miami College of Medicine, University of Cincinnati, Ohio.
SPAIN—Dr. Llonerto, Envoy to the King of Spain.

After the announcement of honorary vice-presidents, the congress was declared open for the transaction of its scientific work.

The Opening Social Event

A reception to the delegates, their wives and daughters, was given by President Taft at the White House at 3 p. m., the garden party being perforce abandoned on account of rain.

THE SCIENTIFIC PROGRAM

The Relation of Anaphylaxis to the Infectious Diseases

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: The theory of vaccination may be traced by comparing its effects to the action of the gastric juice in destroying the protein poisons which are carried into the body in all food substances, such as meat, milk, eggs, vegetables and corn meal. We eat proteins from most diverse sources, still all of them contain a most potent poison. The poison is to some extent set free in the stomach but it does not diffuse through the wall of the alimentary canal. A man may drink water containing typhoid bacilli and he is not immediately ill. There is a period of incubation of about ten days' duration, during which time the bacillus is multiplying in the body in great numbers. Suddenly the period of incubation stops and the onset of the disease manifests itself. This marks the time when the body cells have been sensitized, beginning to elaborate in active form a secretion which splits up and destroys the typhoid bacilli. This continues during the course of the disease. In splitting up the invading organism the protein poison is set free and this is accountable for the symptoms and lesions of the disease. If the poison is set free too rapidly the temperature falls and death results. This is practically what occurs in every infectious disease whether it be of bacterial or protozoal origin.

By the introduction into the body of very minute doses of foreign protein the body cells may be trained, as it were, to split up any bacterial or protozoal cell. This is the fundamental principle of vaccination.

After small-pox, typhoid fever and tuberculosis, the immunity secured is always specific; it protects against the one disease and no other. For some years I have recommended and practiced vaccination of the uninfected members of families in which one or more cases of tuberculosis are developed. The non-poisonous residue of tubercle bacillus supplies a perfectly safe and efficient vaccine and in my opinion it should be generally used. With vaccination and the other means now employed, I feel confident that success will crown the efforts to eradicate this disease. The most hopeful outlook for the control of cancer lies along the direction of anaphylactic study and treatment.

Typhus Fever

DRS. JOSEPH GOLDBERGER and JOHN F. ANDERSON, Hygienic Laboratory, United States Public Health Service, Washington: We have traced typhus fever to an insect—the louse—

as a carrier, and our investigations have disclosed nearly 300 cases of the disease in New York City, as well as a number in Chicago, Philadelphia, Baltimore and Washington, although it is thought that typhus fever has not visited America for some years.

The disease, however, is found to be in a mild form, but mild forms of disease have a bad habit of becoming malignant on the least provocation and the only safe way is to keep away from them altogether. This can easily be done by keeping clean and avoiding the deadly louse.

Typhus fever is one of the six diseases that the United States government considers so dangerous that special quarantine regulations have been issued to keep them from our shores. The malady usually visits those who live in crowded and insanitary habitations and is the poor man's disease.

We have been experimenting with typhus for three years with the result that we find that the germs of infection are carried by lice. The insect is not the ordinary kind found on plants or animals but those that are carried in the clothes or on the head. Why the louse should be the only insect that carries typhus we have been unable to determine. One of these insects which bites a patient during the fever period will be able in about four days afterward to give the disease to any unfortunate victim he may chance to fasten on.

Experiments have shown also that monkeys may contract the disease through the bites of lice.

(To be continued)

AMERICAN ROENTGEN RAY SOCIETY

Thirteenth Annual Meeting, held at Niagara Falls, N. Y., Sept. 11-14, 1912

The President, DR. FREDERICK H. BAETJER, Baltimore, in the Chair

Officers Elected

The following officers were elected for the ensuing year: president, Dr. Henry K. Pancoast, Philadelphia; vice-presidents, Drs. A. W. Crane, Kalamazoo, Mich., and Chas. F. Bowen, Columbus, O.; secretary, Dr. Sidney Lange, Cincinnati; treasurer, Dr. Leonard Reu, Buffalo, N. Y.; librarian, Mr. H. W. Dachtler, Toledo, O.; member executive committee, Dr. George C. Johnston, Pittsburgh, Pa.

Boston, Mass., was selected for the place of holding the next annual meeting, some time in September, 1913.

Roentgen Diagnostics of Internal Medicine

DR. A. W. CRANE, Kalamazoo, Mich.: I wish to emphasize the interdependence of the Roentgen ray, the laboratory and clinical examination. I maintain that the roentgenologist should interpret his own plates and screen observations. His findings should be interpreted always in conjunction with the laboratory and clinical findings; therefore, it is desirable that the roentgenologist consider himself a consulting diagnostician, and that he maintain a clinical laboratory in addition to his roentgenologic equipment. Furthermore, a clinical laboratory is necessary to control the treatment, and not only to aid in making a diagnosis. I have invariably pursued this plan in my own work and can cite a large number of cases in which I would have been unable to make a diagnosis based on the roentgenogram alone. Recourse to the clinical laboratory at once solved the problem.

The Demand for Roentgen Diagnosis

DR. SIDNEY LANGE, Cincinnati: The roentgenologist is really a consultant, and not a maker of pretty pictures. Patients are sent to him for the same purpose that they are sent to the clinical laboratory, to get additional light on an obscure case. The pathologist does not content himself with examining the urine; he also examines the blood, stomach contents, sputum, and even pieces of tissue. The roentgenologist should, therefore, make a very thorough and complete examination of every patient, and not only examine one certain region, such as the gall-bladder. The appendix, the ovary, the intestine, especially the colon, may be the seat of the disease, the symptoms of which are referred to the gall-bladder region. Therefore, an examination to be of any value should include all of these regions.

DISCUSSION

DR. HENRY HULST, Grand Rapids, Mich.: Roentgenologists must either be all-around diagnosticians and act in the capacity of consultants, or they must be photographers and be employed by diagnosticians. We occupy a peculiar position. The Roentgen ray is diagnostic and therapeutic. There is nothing else like it in medicine. As a diagnosticum, we can hardly make it a specialty, any more than one would be a specialist in the use of the cystoscope. I think we make too many pictures and rely too much on what we find in them. Instead of being content with making pictures and giving them to patients and doctors, we should interpret pictures and give our opinion on the case just as any other consultant does. When we are using the Roentgen ray for diagnostic purposes, we are consultants. Patients are sent to us to get our advice and opinion. They are not sent to us to have pretty pictures made.

DR. PERCY BROWN, Boston: The roentgenologist should be a well-trained medical man. He must be a physiologist and an anatomist as well as an internist, because the Roentgen ray will disclose anomalies in development as well as errors in physiology, such, for instance, as the anti-peristaltic action of the large bowel.

DR. ALFRED L. GRAY, Richmond, Va.: There is danger in a purely roentgenographic specialty. We ought to be general practitioners first and then specialists. It is especially important that the roentgenologist have a thorough training in clinical diagnosis and pathology. The Roentgen ray may enable us to make a diagnosis; on the other hand, the clinical and laboratory findings may be necessary to make it possible to make a diagnosis from the roentgenogram. I have often had a patient referred to me for examination and found conditions present which led me to refer the patient to some other specialist who was able to make the diagnosis. We should not content ourselves with the roentgenologic examination. We must know when further examination is necessary.

DR. PAUL EISEN, Milwaukee: If we want to merit the name of diagnosticians, we must keep up with all the latest methods of examination.

DR. GEORGE E. PFAHLER, Philadelphia: The subject of roentgenology is too broad for any one man to know it all; therefore, we must not forget to attend to our own business first, and not try to take charge of the entire examination of every patient sent to us. It is well enough to know when further examination is necessary without being able to make it oneself.

DR. GEORGE C. JOHNSTON, Pittsburgh: What we should know first of all is the full and complete history of every patient sent to us. When an up-to-date internist or surgeon refers a case to me I always expect to get such a history. The necessary clinical examination should be made; laboratory examination should be made, and the reports from all of these are furnished me. I expect to get them and I get them. There is no reason why I should make these examinations. We should not go into these things unless we can do as good work there as we can in our own field.

Post-Operative Treatment of Cancer

DR. ARTHUR F. HOLDING, New York City: At the request of certain scientists and philanthropists there has been appointed the Huntington Cancer Commission of New York, consisting of members of the faculty of Cornell University Medical College, whose duty it is to investigate thoroughly the treatment of all forms of cancer by the Roentgen ray, radium, sera, vaccines, electrolysis, etc. There is such wide variance of opinion as to the value of the non-surgical treatment of cancer and in the reports made as to its efficacy, that it has been deemed advisable to make a thorough investigation and report thereon publicly. The committee will endeavor to standardize apparatus and technic and to make a complete study of as many cases as possible. The assistance of all those interested in this line of work is sought.

Treatment of Malignant Growths

DR. RUSSELL H. BOGGS, Pittsburgh, Pa.: The degree of malignancy varies with the lymph supply of that part of the body in which a cancer is situated. The richer the lymph supply, the greater the degree of malignancy. When properly applied, Roentgen irradiation diminishes the permeability of the lymph vessels, and reduces the possibility of metastasis occurring as well as preventing, in large measure, a recurrence. If the treatment is given before operation, an inoperable case may be converted into an operable one. Every malignant growth presents a separate and distinct problem which demands for its solution consistent team work on the part of the patient and the operator. The improvements in surgical technic have done much to reduce the number of recurrences of cancer, but expert surgeons are not satisfied with the results obtained from surgery.

Roentgen irradiation of malignant growths must be powerful enough to destroy the neoplastic cells and to stimulate the healthy cells to resist the invasion. A small dose is useless. Small doses given for a long time really favor the development of the growth, because they stimulate, whereas they should destroy. I have treated quite a number of cases of lymphosarcoma of the neck both before and after operation. The experience gained from treatment without operation has convinced me that these tumors will usually disappear under heavy Roentgen treatment, and that the results are more permanent, if the treatment is given first without operation. In nearly every case the mass can be made to disappear, if the treatment is begun before the glandular involvement is too extensive. After the growth has entirely disappeared, a second series of radiations should be begun as soon as the skin reaction has disappeared. It may be necessary to give a third or even a fourth series of treatments. I have patients apparently well for over four years, the diagnosis having been made microscopically.

My most successful results in sarcoma have been confined chiefly to the lymph nodes. The cancer cases in which Roentgen treatment has been of the greatest service were those of involvement of the breast, cervical lymph nodes, and other external parts when internal metastasis had not taken place. Roentgen therapy should be applied to deeply seated growths, not with the idea of effecting a cure, but to check the progress of the growth and to make the patient more comfortable. Post-operative treatment should be begun immediately after the operation. The treatment must be given according to the best judgment of the roentgenologist, and not of the physician or surgeon referring the patient for treatment. Some unfavorable cases can be made favorable for operation by anteoperative treatment, and hopeless cases may be treated palliatively with great relief to the patient.

DISCUSSION

DR. GEORGE E. PFAHLER, Philadelphia: I saw a case of lymphosarcoma involving the side of the neck which was considered hopeless from every point of view. I treated the patient with the Roentgen ray in the hope that I could give some relief. Within three months the tumor had undergone cystic degeneration. I referred the patient to a surgeon, who opened the cyst and drained it of a large amount of yellowish, pus-like fluid. It was assumed that my diagnosis was wrong, that the case was one of tuberculosis. Pathologic and clinical examination, including the inoculation of guinea-pigs, failed to substantiate that assumption. In about six weeks recurrence was noted and the patient finally died of sarcoma. I merely cite the case to show what the Roentgen ray can do in these cases.

I have had cases of carcinoma in which the course was similar to that cited in the case of sarcoma. I agree with Dr. Boggs that the first treatment we have for these cases is Roentgen therapy. We must give as large a dose as possible, without producing a burn, and persist in the treatment for a long period of time. There are a large number of cases on record in which an apparent cure was obtained by Roentgen treatment, so that a cure under such conditions is by no means to be regarded as an accident.

MR. H. W. DACHTLER, Toledo: A few years ago I refused to treat any case with the Roentgen ray when I was convinced that it was perfectly useless. I find now, however, that some patients treated two years ago are apparently well, patients whom I would not have given any treatment at all had I seen them three years ago. Some surgeons now refer every case of malignant growth for Roentgen treatment immediately after the operation.

DR. P. M. HICKEY, Detroit: The results obtained by me in several cases of malignant growth have convinced me that the combined treatment of surgery and Roentgen irradiation is the proper one, and that it should be carried out whenever possible. We can now hold out more hope to the patient than was possible a few years ago.

(To be continued)

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

Twenty-Fifth Annual Meeting Held at Toledo, Ohio, Sept. 17-19, 1912

The President, DR. X. O. WERDER, Pittsburgh, Pa., in the Chair

Cesarean Section in Double Uterus and Double Vagina

DR. N. STONE SCOTT, Cleveland, reported the case of Mrs. A., aged 32 years, primipara, who had always had a moderate dysmenorrhea, was never very regular, never ahead of time, usually late a week or more; the menstrual period was preceded by a week of pain. She had no idea that there was an abnormality of development such as was discovered by her physician at the time of the confinement. After labor lasting three days, the attending physician discovered a septum in the vagina, with a cervix on each side of the septum, the pregnancy being on the left side. No progress was made in labor. The os was found undilated, although it easily admitted the finger. The head was high, but firmly impacted in the pelvis. The pelvic measurements were those of an equilibrio justo minor with a conjugata vera of about 9 cm.

A high cesarean section was now carried out. After the placenta and membranes had been removed, examination proved that the uterus was double, with a rupture of the septum between the two cavities. This rupture occurred at the thinnest place, in the middle of the septum, but even here it was a quarter of an inch thick. Through this rupture the false decidua were removed from the right uterine cavity, the fetus occupying the cavity on the left. The tubes were normally implanted, one at either side of the fundus. There was no cleft in the uterus itself, but a raphe running the entire length of the uterus was plainly seen at the surface.

Prior to the patient's leaving the hospital, careful examination was made to ascertain postoperative conditions. The cervix on the right side presented the features of an unimpregnated cervix; the one on the left corresponding to an ordinary cervix two weeks after delivery; it was considerably larger than the cervix on the right side, somewhat dilated, and in it was a very small lateral tear. The left vagina was possibly a trifle larger than the right, though not much. Both cervices lay comparatively close to the median partition. On the fourteenth day following the laparotomy, mother and child went home in the best of condition.

Acute Dilatation of the Stomach

DR. CHARLES EDWARD ZIEGLER, Pittsburgh, Pa.: I report a case of acute dilatation of the stomach following cesarean section. Postural treatment and hypodermic medication appeared useless in the case. The supply of fluid was kept up by rectal and subcutaneous infusion of salt solution. Gastric lavage was the only treatment that caused any amelioration in the symptoms so far as we were able to judge. If there is one thing to be learned in the treatment of this condition from my case, it is that gastric lavage in acute dilatation of the stomach should be repeated at intervals of not less than two hours. My own feeling is that gastrostomy, with continuous irrigation of the stomach, ought to be the ideal treatment, and should be given a trial in cases which do not respond to two-hour lavage.

DISCUSSION

DR. HERMAN E. HAYD, Buffalo, N. Y.: I do not think we can put the case reported by Dr. Davis in the category of acute gastric dilatation. Unfortunately he did not have a post-mortem examination. It is possible that this woman had a dilated stomach previous to her pregnancy, and that this dilatation was in a measure hastened by the advancing or growing uterus, and just as soon as he emptied the uterus of its contents, the patient had an acute dilatation of the stomach from the large amounts of ether and air that were taken in. It is unfortunate that we are compelled to accept the services of untrained anesthetists. One of the most important duties the physician is called on to perform is the administration of the anesthetic in an operative case. We are going to get into trouble before long if we delegate this to a nurse. The laws of New York state prescribe that no one but a regular medical graduate may give an anesthetic.

DR. FRANCIS REDER, St. Louis: I think that dilatation of the stomach in these cases is due in many instances to the toxic elements of the anesthetic that has been administered during a long period. There are other toxic elements which will bring about the same condition.

DR. SYLVESTER J. GOODMAN, Columbus, reported a case in which the skull of the fetus had been crushed by the attending physician some hours before he saw the woman. The uterus was full of small fibroids. He advised hysterectomy, which was refused on the ground that the child was dead. This woman was again pregnant and he expected to do a second cesarean section the following month.

DR. WILLIAM H. HUMISTON, Cleveland: Cesarean section in an uncontaminated case is so far safer and surer in its results than the high forceps operation, that I believe the time is coming when the high forceps operation will not be resorted to by the general practitioner, but only by the thoroughly trained man in obstetrics.

DR. WILLIAM S. BAINBRIDGE, New York: A woman was brought to me from Bridgeport, Conn., about four years ago, with a history of having had six pregnancies, with attempts at delivery each time, most of them instrumental, with death of the child in each case. She had a justo minor pelvis and came to me for repair. The entire pelvic floor was torn away and the bladder opened. There was a vesicovaginal fistula as well as a rectovaginal fistula. I repaired these injuries, and told her she must not become pregnant again, although she was very desirous of having a living child. She came back to me a year following or a little later pregnant. I told her we should have to do a cesarean section, explained to her what was to be done, and two years ago a child was delivered by cesarean section.

DR. A. S. HOTALING, Syracuse, N. Y.: Two years ago I did a cesarean section for eclampsia on a girl aged 17. She was seven and a half months pregnant, with undilated, unobliterated cervix. About a month ago she came into the hospital as a private patient, having been brought there by her physician, who thought she was in labor. I saw her at 9 o'clock in the morning. She died shortly after 1 o'clock from hemorrhage. Autopsy the next morning disclosed rupture of the uterus. The organs were all transposed. The rupture was directly through the old scar.

DR. HUGO O. PANTZER, Indianapolis: Bearing on the multiple etiology of gastric dilatation, I wish to report a case that recently came under my observation in support of the supposition of Dr. Davis that in his case acute pressure applied to the stomach may have been a factor in producing gastric dilatation. The patient put on a snugly fitting corset to attend an automobile race, and was brought away from there in convulsions. Examination disclosed that she had gastric dilatation which was brought on by constricting her abdomen too tightly by means of this corset.

Mechanism and Treatment of Placenta Prævia

DR. HENRY SCHWARZ, St. Louis: 1. No form of placenta prævia, as such, ever offers a justifiable indication for cesarean section. 2. Version after Braxton-Hicks in the presence of a viable child deliberately sacrifices the life of that child, and has no place in modern obstetrics. 3. The cervical and vaginal tampon and the interuterine use of rubber bags are safe and efficient means for controlling hemorrhage and for securing sufficient dilatation for delivery through the natural passages.

DISCUSSION

DR. E. GUSTAVE ZINKE, Cincinnati: It is just as wrong to say that cesarean section is never indicated in placenta prævia as it would be to say that the only operation for placenta prævia is cesarean section. When I read a paper on placenta prævia eleven years ago advocating cesarean section for that condition, I did not find a single supporter. I was not the first to recommend it for placenta prævia. That credit belongs to Lawson Tait. I performed my first cesarean section for placenta prævia about two months ago. A case of placenta prævia centralis in a normal uterus, in which the placenta has been formed in the normal way, in which the placental tissues do not penetrate the uterine musculature and in which the thickness of the uterine wall is uniform throughout, even at the placental site, will admit of dilatation, in many instances, without serious hemorrhages from the hands of a skilful obstetrician. The situation is entirely different when we have a diseased musculature and a normal implantation of the placenta into the muscle of the uterus. Then there is not the separation that there is in the other case, and hemorrhage is uncontrollable in spite of the best means of handling the case, whether the position be vertex, breech, transverse or what not. Then in cases of rigid os, when there are hyperplasia and possibly incipient malignancy which is not recognized at the time, dilatation does not take place until the patient continues to bleed, and the moment the obstetrician introduces his hand for the purpose of dilatation, the patient is likely to be brought to the verge of death before the child comes out of the uterus. These are the cases for which I have recommended cesarean section.

DR. MILES F. PORTER, Fort Wayne, Ind.: If a woman is in good health and is known to be the possessor of a viable child at term, with a placenta prævia centralis, she can be given a better chance for her own life and that of her child by a cesarean section at the hands of a good man than she can by any so-called obstetric procedure at the hands of the best obstetrician ever created.

DR. JOHN NORVAL BELL, Detroit: I would take exception to the remark made by Dr. Schwarz that cesarean section is not indicated in any form of placenta prævia. My remarks were directed entirely to placenta prævia centralis.

DR. MAGNUS A. TATE, Cincinnati: In a case of malignancy of a fibroid tumor complicating pregnancy, I would make a cesarean section for the malignant condition or for the fibroid tumor, and not for a case simply of placenta prævia centralis. One of the crying needs at present is for more trained obstetricians and fewer skilled surgeons.

DR. CHANNING W. BARRETT, Chicago: I believe cesarean section for placenta prævia is much overdone in the hands of general surgically trained men. I believe, further, that if more of these cases fell into the hands of trained obstetricians, more would be treated through the natural route and fewer cesarean sections would be done.

DR. CHARLES L. BONIFIELD, Cincinnati: There is no branch of medicine more neglected in the medical schools of to-day than obstetrics, and if there were more trained obstetricians cesarean section would not be performed as frequently as it is. There are certain cases, however, in which a skilled surgeon is better than a skilled obstetrician.

Rapid Dilatation and Accouchement Forcé

DR. HENRY S. LOTT, Winston-Salem, N. C.: Delivery should be made in all cases of puerperal convulsions, if the patient is at all near full term, on the appearance of even initial labor pains. With strict asepsis and forcible, rapid dilatation, preferably manual, the application of forceps and delivery by the natural outlet are safest and will give the best results. Delivery should be effected under ether, and with care and deliberation. In the two cases of tear of the sphincter which I report in my paper, I firmly believe that greater deliberation in delivery would have lessened the extent of the injury.

Puerperal Thrombophlebitis

DR. PALMER FINDLEY, Omaha: Ligation of the pelvic veins in this condition is correct in theory, but is yet in the experimental stage. After reporting four cases, I submit the following propositions for consideration: 1. Trendelenburg's operation is correct in theory, but is yet in the experimental stage. 2. It is contrary to my practice and to modern teaching to open the abdomen in the course of puerperal infection unless for drainage in general peritonitis, and I therefore view Trendelenburg's suggestion with misgivings. 3. We are as yet unable to demonstrate clinically the extent to which the infection has traveled, and hence it follows that an exploratory incision must be the final resort in determining the extent of the infection, though even this may fail to give the desired information. 4. The pelvic veins, including the iliacs, may not be thrombosed, yet the infection may attack the veins higher in the abdomen and beyond control, and even beyond inspection through an exploratory incision. Furthermore, bacterial emboli may lodge in the lungs and elsewhere without the formation of thrombosed veins. 5. The thrombosed veins may be secured and the infection later travel by other avenues and lead to a fatal issue. 6. It is not always possible to demonstrate the presence of infected emboli which, when found, are viewed as contra-indications to operative interference. 7. I believe that the Trendelenburg operation will find a limited field of usefulness in obstetric surgery, but that the procedure is worthy of an extended trial.

DR. K. ISADORE SANES, Pittsburgh, Pa., read a paper in which he reviewed the literature on thrombophlebitis.

DISCUSSION

DR. R. R. HUGGINS, Pittsburgh, Pa.: I believe that recovery occurs without operation or under palliative treatment in many cases of thrombophlebitis; but my experience shows six cases of the severe form of thrombophlebitis in the last twenty years, with five deaths, with palliative treatment. I resolved two years ago that in my next case of septic thrombophlebitis I would explore the abdomen and see what the matter was. I did this, and the patient recovered. Since that time I have had three other cases, a total of four, with three recoveries. The abdomen should be opened in the midline, which will give a good view of the veins in the pelvis and abdomen. In my experience the operation does these patients no harm. They stand it very well. Even when there is an accompanying lymphangitis, I do not see any objection to operating, especially when the condition has extended along the ovarian veins under the retroperitoneal space, a position or place in the body which is most dangerous if the condition is allowed to progress. If the veins are tied from within, it is easy to make an extramedian incision, push the peritoneum forward and drain behind the veins, or excise the ovarian veins down deep in the pelvis, and the operator will not only have ligated the source of infection, but will have drained the infected spaces, and the patient is much more likely to recover.

Ectopic Gestation

DR. SAMUEL W. BANDLER, New York: It is difficult to make a positive diagnosis in many cases before the stage of hematocele, in some cases unless the hematocele is organized. Vaginal incision is of value in making the diagnosis, and "blue shimmer" in the vesico-uterine fold is important.

The specimen shows an exceedingly small ovum not sufficiently large to fill the normally narrow lumen of the isthmian portion of the tube. At this point the tube shows some anomalous features. A muscular spur formation is present, causing a diverticulum to form with its blind end buried in the mesosalpinx, and on the mesial aspect of the point of nidation. The ovum rests on and is imbedded in a muscular eminence to the distal side of the muscular spur, and is nowhere in connection with the diverticulum on the proximal side. It projects into the lumen of the tube but is covered by tubal epithelium. This covering is complete in the half nearest the uterus, but only partially in the half nearest the fimbria, where it may be assumed to suggest a beginning intracapsular rupture, and a very early intratubal rupture.

The embryo as such is not present. It is represented by several large masses and streaks of trophoderm which lie near the trophoblast, and contains fresh blood in contrast to the rest of the coagulum. There is as yet no true chorion formation. Leukocytes are present underneath the base of the ovum between the loose muscle fibers, and nowhere else in the serosa, musculature or mucosa of the tube. In view of the total absence of evidence of salpingitis this leukocyte infiltration can be assumed to indicate a secondary local reaction and not a primary inflammation.

DISCUSSION

DR. J. HENRY CARSTENS, Detroit, reported a case of pregnancy which simulated extra-uterine fetation or pus-tube.

Injuries of the Pelvic Floor Resulting From Labor

DR. FREDERICK BLUME, Pittsburgh, Pa.: The public ought to be informed that injuries of the pelvic floor are unavoidable in the vast majority of cases, and that their repair is the end-act of labor. Careful examination and immediate repair should be the rule in ordinary cases. If the tear extends into the bowel or through the sphincter, the operation may be done on the day following labor, with better light, assistance, etc. It is strange that even at the present time some obstetricians do not deem it necessary to repair the laceration, but leave the restoration of the pelvic floor to Nature.

The Complete Absence of Milk in the Primipara

DR. FRANCIS REDER, St. Louis: The causes that may bring about in the healthy woman a primitive agalactia in its extreme degree can be found in a very youthful motherhood, when normally a deficient development in the secreting cells may be expected. It can be found in the motherhood of advanced age, in which normal atrophic conditions of the gland have caused extensive cell destruction. A tendency to fatness sometimes completely inhibits the functional activity of the gland. Furthermore, a tendency toward the masculine may seriously affect milk secretion and in rare instances be the cause of agalactia. Physical influences, such as emotions of sudden onset, fright, shock, etc., are prone to bring on by their depressing reflex action on the sympathetic nervous system injurious influences that may inhibit cell activity in the organ. In my paper I report three cases of agalactia in three primiparas. In these the cause must be attributed to psychic influences inasmuch as there is no other discoverable factor to which the condition could be assigned. It cannot be disputed that the nervous system exerts some influence on milk secretion. It remains to be demonstrated whether or not such an influence is direct or indirect. As the method of control for the action of hormones is also through the sympathetic ganglia, the shock which these primiparas suffered during their severe labor must be looked on as a potent factor in causing the agalactia.

Moral and Ethical Aspects of Feticide

DR. E. A. WEISS, Pittsburgh, Pa.: A careful consideration of the moral aspect of feticide brings prominently to our attention several facts. 1. The large number of abortions performed is becoming a serious menace to the health and welfare of our people. 2. Such termination of human life is a most serious matter and every possible safeguard should be taken to restrict it. 3. There seems to be a gradually increasing tendency on the part of the laity as well as the profession to take advantage of the law and teaching which permits and sanctions the induction of abortion. 4. In most medical colleges a student has not positive teaching on the moral aspects of abortion, and he is allowed to work out his own ideas with regard to its ethical aspects. 5. There is a gradual loss of respect for religious teachings which have always condemned the taking of the life of an unborn and unbaptized child as a sin and murder. 6. Many, if not all the members of this Association, are teachers and leaders in obstetrics and gynecology in their respective communities, and the responsibility of this teaching rests with us. I plead for a more humane view and consideration of the rights of the innocent unborn child.

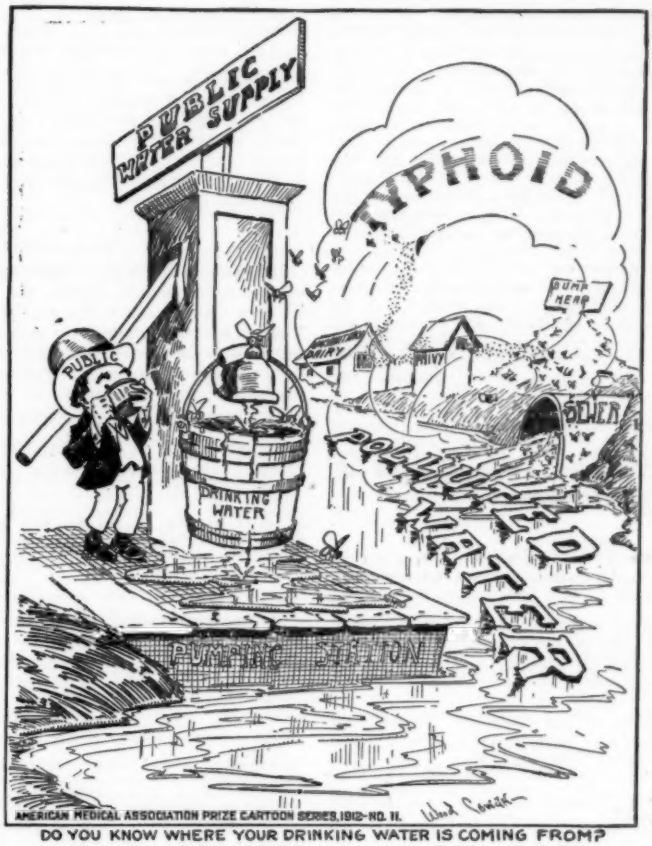
(To be continued)

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

OUR NATIONAL HEALTH GUARDIANS

"Far from being taken by surprise by the approach of the plague, the officials of the Public Health Service have been expecting it for the past two or three years. Knowing that it traveled the great commercial highways, they have followed its progress from what is apparently its permanent reservoir in China to port after port, tracing its course around South America and across the Spanish Main to Porto Rico. Its appearance in San Juan and Havana was the signal for the adoption of exceptionally strict protective measures on account of the great volume of trade and the frequency of communication between these cities and the United States. To meet and repel a threatened invasion by infectious disease is one of the every-day achievements of modern medical knowledge working through the efficient organization of the Public Health Service."



This tribute in the *Outlook* is a terse summary of a prodigious amount of work on the part of our efficient guardians of the national health. The public is recognizing these facts. The more closely this work touches commerce the more appreciation will be given to it. For example, the ending of the *Outlook* editorial is as follows:

"An occasion like the outbreak of bubonic plague close at hand serves to call attention, however, to the great economic value of this work as well as to its service in protecting the public health and affording mental security to the people of the country. It shows also in a striking way the tremendous dollars-and-cents value of medical research, which is sometimes decried as of small practical importance. Without the knowledge gained by experiments on animals to determine the cause of bubonic plague and the methods of its transmission, the entire Atlantic and Gulf seaboard would be cut off from communication with Porto Rico and Cuba at the present moment, with a consequent heavy loss to commercial interests from this suspension of business. More than likely, indeed, our coast cities in such case would be grappling with serious outbreaks of the plague, and their terror-stricken inhabitants would be isolated from the rest of the country as well as from the outside world. Medical science has thus not only warded off a source of fear, but also contributed to the steadiness and prosperity of commerce."

The *Outlook* is right in regard to the importance of public health, and yet it here emphasizes the commercial side. This is one indication among others that commerce is still more important in the national eye than is national health. The day is coming when this will be changed—the physical welfare of the people will be placed first.

THE CENTURY ON THE "MEDICAL TRUST"

Numerous newspaper comments have been quoted in this department during the last two years, indicating the trend of public opinion regarding national health legislation, and showing especially that the American people have not been particularly impressed by the cry of "Medical Trust," raised against those physicians who have advocated better methods for health conservation. The source of these attempted slurs on the sincerity of the medical profession has been apparent. An overwhelming majority of the American people is not yet ready to believe that the profession, in whose hands rest the lives and health of the people, is attempting to establish any selfish monopoly, or to influence the public for anything except for the public good. Probably the *Century Magazine* can be accepted as one of the most dignified and conservative representatives of periodical literature in the United States. In its September issue under the heading of "In Appreciation of the Doctor," the editor of the "Topics of the Time" department expresses what may well stand as the conservative, deliberate judgment of the intelligent public on issues which have now been before it for over two years:

"As one cannot draw an indictment against a community, so one cannot reasonably give sweeping approval of a profession; but now and then,—perhaps in the lifting shadow of some dread illness happily surmounted,—one is moved to a new sense of the obligations under which we all rest to the physician. Sometimes this is obscured by the conduct of those who 'don the livery of heaven to serve the devil in'—a class against whom the profession wages persistent warfare; but on the whole not even 'the cloth' presents a higher standard of service to humanity. Sordid and base, indeed, must be the man who can deliberately violate the solemn dedication of the Hippocratic oath, to which he must subscribe before he is accorded his degree."

After quoting the oath, the editor continues:

"And there is need of this vow, if society is not to go to pieces, for little as we know of the physician, it is little of us that he does not know—our foibles and weaknesses, our sins and sorrows—and rare is the man or woman who is not debtor to his skill, his sympathy, his cheer, and his loyal devotion. It is always with a pang that we read of the death of such a doctor, trusting that he may have received in his last days some repayment in kind for all that he has given of service to others.

"In the memory of many such experiences it is with indignation that one bears the rank and file of this noble profession pilloried as 'the doctors' trust' by those opposed to the bill of Senator Owen for a national department of health. It is not necessary to probe for the motives of those who are fighting this admirable measure. Doubtless many, especially those of them who profess the faith of Christian Science, are conscientious, but nevertheless, under the banner of 'medical freedom,' they are playing into the hands of patent-medicine manufacturers, adulterators of food, and medical charlatans, to the peril of the public health. The Owen bill will merely extend to the whole country and make more effective the kind of sanitary guardianship which in the city of New York is accomplishing a progressive and astonishing reduction of the rate of mortality. Imagine for a moment the department of health of this city and port discontinued: it would not be forty-eight hours before we should be exposed to physical dangers comparable only to the brood of Pandora's box.

"The fact is that in the practical application of preventive medicine American physicians are acknowledged to be the leaders of the world. They have not lost the primacy in this respect which twenty years ago led their confrères in Vienna to say: 'We are astonished at your achievements: over here we wait with impatience for the publication of your volumes.' Twenty-five years ago Mr. Bryce in his great book, 'The American Commonwealth,' quoted the appreciation of 'competent authorities' of our contributions to biology and medical science.' 'Indeed, it is remarkable,' he said, 'how far from showy and sensational is the bulk of the work [in general science] now done in America.' What must he say now of the great proportions which medical and surgical research have since attained! The pursuit of medicine in America fairly seethes with progress and interest. It has all the zest of exploration. Millions of dollars are invested in the study of diseases once thought incurable; unrelenting warfare is waged on contagions, infections, and heredity; the education of the public on matters of health is systematic and thorough, and back of the professional honor which impels it all is a spirit of quiet altruism which is a better substitute for the knighthood of the Middle Ages. Once more we say, gratitude and honor to the good physician!"

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, October 7-8. Sec., Dr. John Wix Thomas.

COLORADO: Denver, October 1. Sec., Dr. David A. Strickler, 612 Empire Building.

GEORGIA: Regular, Atlanta, October 8-10. Sec., Dr. C. T. Nolan, Marietta; Homeopathic, Atlanta, October 3. Sec., Dr. R. E. Hinman, 106½ Whitehall St., Atlanta.

IDAHO: Idaho Falls, October 1-2. Sec., Dr. O. J. Allen, Bellevue.

KANSAS: National Hotel, Topeka, October 8. Sec., Dr. H. A. Dykes, Lebanon.

MICHIGAN: Capitol Bldg., Lansing, October 8-10. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: State University, Minneapolis October 1. Sec., Dr. Thomas S. McDavitt, Lowry Bldg., St. Paul.

MISSISSIPPI: Capitol, Jackson, October 22-23. Sec., Dr. W. W. Smithson.

MISSOURI: Coates House, Kansas City, October 1-3. Sec., Dr. Frank B. Hiller, Jefferson City.

MONTANA: The Capitol, Helena, October 1, 1912. Sec., Dr. William C. Riddell.

NEW JERSEY: Capitol Bldg., Trenton, October 15-16. Sec., Dr. H. G. Norton.

NEW MEXICO: Santa Fe, October 14. Sec., Dr. W. E. Kaser, East Las Vegas.

OKLAHOMA: Muskogee, October 7-9. Sec., Dr. John W. Duke, Guthrie.

RHODE ISLAND: State House, Providence, October 3. Sec., Dr. Gardner T. Swarts.

UTAH: Salt Lake City, October 7-8. Sec., Dr. G. F. Harding, 310 Templeton Building.

WYOMING: Riverton, October 9-11. Sec., Dr. A. B. Tonkin.

Class C Colleges Not Recognized

Dr. H. A. Barbee, secretary of the West Virginia State Board of Health, reports that at a meeting of that board held in July, 1912, a resolution was adopted that candidates be not recognized for examination for license to practice medicine in West Virginia who have graduated after July, 1913, from any medical college, school or university whose standards are less than those recognized for Classes A and B by the Council on Medical Education of the American Medical Association. Action to the same purpose has previously been taken by the licensing boards of Alabama, Louisiana, Minnesota, North Dakota, New Jersey and Rhode Island. In the two states last named only colleges rated in Class A are recognized.

Failures at the Michigan May Examination

Dr. B. D. Harison, secretary of the Michigan Board of Registration in Medicine, says that through a misunderstanding two failures were omitted from his report of the May, 1912, examination, published in THE JOURNAL, August 31, p. 740. Instead of only 44 being examined, all of whom passed, there were 46 examined of whom 44 passed and 2 failed. The failures were as follows:

College	Year Grad.	Per Cent.
FAILED		
Detroit Homeopathic College	(1910)	67.6
Laval University, Quebec	(1902)	*

* Fell below 50 per cent. in three subjects.

Michigan is one of the states which eliminates prior to the examination graduates from medical colleges which are not recognized by the board. Others are also refused the right to take the examinations because of inadequate preliminary education. Thus many candidates are rejected prior to the examinations who otherwise would doubtless swell the percentage of failures.

Iowa June Report

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examinations held at Iowa City, June 6-8, and at Des Moines, June 13-15, 1912. The total number of subjects examined in was 8; total number of questions asked, 100; percentage required to pass, 75. At the examination held at Iowa City, the total number of candidates examined was 47 all of whom passed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
College of Physicians and Surgeons, Chicago,	(1912)	87.5, 88.7, 92.5.
Northwestern University Medical School	(1912)	91
Chicago College of Medicine and Surgery	(1910)	79.4
State University of Iowa, College of Medicine,	(1912)	80, 84, 84, 86, 87, 87, 87.5, 88, 88, 88.1, 88.5, 88.7, 89, 89, 89, 89.5, 89.9, 90, 90, 90, 90, 90.7, 91, 91.5, 91.6, 91.7, 91.9, 92, 92, 92.4, 93, 93.5, 94.4, 95.
State University of Iowa, Homeopathic College,	(1912)	88.1, 87.9, 91.2, 92.5.
Jefferson Medical College	(1912)	88.6, 91, 91, 93.1

At the examination held at Des Moines, the total number of candidates examined was 55 of whom 50 passed and 5 failed. Five candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Northwestern University Medical School,	(1910)	89.4; (1911) 83.2, 83.4, 83.6.
Hahnemann Medical College and Hospital, Chicago,	(1912)	89, 91
Bennett Medical College	(1912)	93.1
Chicago Coll. of Med and Surg.	(1908)	91; (1911) 91.4
College of Physicians and Surgeons, Chicago,	(1912)	84.1, 86.4, 88.6, 92.1, 93.4.
Rush Medical College,	(1899)	80.4; (1903) 89.5; (1911) 83.2, 88, 89.
Drake University,	(1912)	84.6, 84.7, 85, 86.6, 86.7, 88.6, 88.6, 88.9, 89, 89.4, 89.7, 89.9, 91.7, 92, 95.
Kentucky University	(1903)	88.9
Barnes Medical College	(1911)	75.4
St. Louis College of Physicians and Surgeons	(1910)	79
St. Louis University	(1911)	81.2; (1912) 93.4
University Medical College, Kansas City	(1912)	93.6
Washington University, St. Louis	(1912)	92.1
University of Nebraska	(1912)	94.1
Jefferson Medical College	(1912)	87.9, 90.9, 91.5, 91.9, 93.2
Woman's Medical College of Pennsylvania	(1908)	91.2
Milwaukee Medical College	(1912)	78.6, 80.4
FAILED		
College of Physicians and Surgeons, Chicago	(1912)	73.2
Hahnemann Medical College and Hospital, Chicago	(1911)	69.9
State University of Iowa, College of Medicine	(1897)	72.6
Keokuk Medical College	(1892)	39.3
St. Louis College of Physicians and Surgeons	(1910)	57

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Rush Medical College	(1897)	Minnesota
University of Michigan, Dept. of Med. and Surg.,	(1908)	Michigan
St. Louis University	(1911)	Missouri; (1911) Nebraska
Woman's Medical College of Pennsylvania	(1898)	Ohio

Virginia June Report

Dr. Herbert Old, secretary of the Medical Examining Board of Virginia, reports the written examination held at Richmond, June 18-21, 1912. The total number of candidates examined was 17; total number of questions asked, 101; percentage required to pass, 75. The total number of candidates examined was 116 of whom 89 passed including 3 osteopaths and 27 failed including 1 osteopath. Four candidates withdrew from the examination. Six candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Georgetown University	(1910)	80
George Washington University	(1912)	83, 85
Howard University	(1911) 77; (1912)	75, 78
University of Louisville	(1911) 75; (1912)	75
Hospital College of Medicine, Louisville	(1903)	78
Johns Hopkins University	(1912)	83, 91
Maryland Medical College	(1910) 76; (1912)	75
University of Maryland	(1912)	77
Baltimore Medical College	(1900) 75; (1912)	75, 77
Leonard Medical School	(1911) 75; (1912) 77, 79,	80
University of Pennsylvania	(1911) 77, 79; (1912)	82
University of the South	(1908)	75
Meharry Medical College	(1911) 75, 76; (1912)	78
Lincoln Memorial University	(1911) 75; (1912)	77

University College of Medicine, Richmond (1911) 79; (1912) 75, 75, 75, 77, 78, 78, 78, 80, 80, 80, 81, 81, 81, 81.5, 82, 83, 84, 86, 87.

Medical College of Virginia (1911) 75, 76, 78; (1912) 75, 75, 75, 75, 76, 76, 76, 77, 77, 77, 78, 79, 79, 80, 80, 80, 81, 81, 81, 81, 82, 82, 83, 84, 86.

University of Virginia (1908) 81; (1910) 75; (1912) 75, 79, 83, 84, 85, 88.

FAILED

Georgia College of Eclectic Medicine and Surgery	(1912)	59
Louisville and Hospital Medical College	(1908)	46
Maryland Medical College	(1909) 66, 71; (1911)	72.8
Leonard Medical School (1910) 71; (1911) 60, 61.6, 73.3; (1912) 47, 60, 63, 64, 70, 73.3.		
Jefferson Medical College	(1895)	68
University of West Tennessee	(1910) 60; (1911)	58
Meharry Medical College	(1911)	50
Chattanooga Medical College	(1908)	46
University of the South	(1909)	73
Medical College of Virginia	(1911) 72.7; (1912) 66, 69,	73.6
University College of Medicine, Richmond	(1912)	70

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Louisville	(1908)	W. Virginia
University of Maryland	(1910)	Maryland
College of Physicians and Surgeons, Baltimore	(1911)	Maryland
University of Michigan, Dept. of Med. and Surg.	(1894)	Michigan
Albany Medical College	(1895)	New York
Woman's Medical College of Pennsylvania	(1900)	Kentucky

Colorado July Report

Dr. David A. Strickler, secretary of the Colorado State Board of Medical Examiners, reports the written and oral examination held at Denver, July 2, 1912. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 27, of whom 24 passed and 3 failed, including 2 osteopaths. Sixteen candidates were registered on presentation of satisfactory credentials, including state licenses. The following colleges were represented.

PASSED

College	Year Grad.	Per Cent.

University of Colorado (1911) 75.2, 84.7; (1912) 78.9, 79.7, 80.4, 81.4, 83, 83.1, 84.1, 84.3, 84.4, 84.9, 85.2, 85.4, 86.4, 86.9, 87.6, 87.7, 88.2, 92.2.

Rush Medical College	(1912)	83.4
Chicago College of Medicine and Surgery	(1912)	86.1
Northwestern University Medical School	(1912)	92.8
Undergraduate		78.9

FAILED

Howard University, Washington, D. C.	(1906)	62

LICENSED ON PRESENTATION OF SATISFACTORY CREDENTIALS

College	Year Grad.	State Licenses
University of Colorado	(1911)	Wyoming
Northwestern University Medical School	(1906)	Penna.
Rush Medical College	(1893)	Illinois
University of Louisville	(1911)	Kentucky
Baltimore Medical College	(1907)	Wyoming
University of Maryland	(1897)	Maryland
Harvard Medical School	(1910)	Maine
Barnes Medical College	(1902)	Missouri
Washington University, St. Louis	(1896)	Illinois
Albany Medical College	(1900)	Illinois
Miami Medical College	(1903)	U. S. Army
Western Reserve University	(1908)	New Mexico
Medical College of Ohio	(1889)	Iowa
Hahnemann Med. Coll. and Hosp., Philadelphia	(1898)	Penna.
University of Vermont	(1902)	Vermont
McGill University, Quebec	(1885)	Iowa

The following questions were asked:

ANATOMY

1. Describe in detail the lower end of the humerus. 2. Describe the radius, including muscular and ligamentous attachments. 3. Give the origin, insertion and nerve-supply of the following muscles: flexor profundus digitorum, adductor longus, tensor vaginæ femoris, tensor tympani and external rectus (of eye). 4. Name the muscles which extend the thigh. 5. Name the branches of the axillary artery. 6. Describe the arteries which supply the muscular tissue of the heart. 7. Name the branches of the internal cord of the brachial plexus and describe one of them in detail. 8. Name the vessels supplying the large intestine. 9. Give a short description of the floor of the fourth ventricle. 10. Describe the pelvic floor.

PATHOLOGY

1. Describe the pathology of arteriosclerosis. 2. Locate and describe the changes in locomotor ataxia. 3. Discuss *Spirochæta pallida*. 4. Describe the most common tumor found in bone. 5. Locate and describe the organic changes liable to arise from long-continued suppuration. 6. Describe simple atrophy. Give examples. 7. What pathologic changes are found in diabetes mellitus? 8. Discuss (not over one page) the post-mortem findings, macroscopically and microscopically, of a case of diphtheria. 9. Locate and describe the changes occurring in Bell's palsy (peripheral facial paralysis). 10. Discuss the pathology of gastric carcinoma.

CHEMISTRY

1. Give the comparative significance of the following suffixes: -ous, -ic, -ite, -ate. 2. Define the terms, "atomic weight," "atomic volume," "molecular weight" and "molecular volume." 3. Name and differentiate the three classes of sugars. 4. Define peptones and tell how produced. 5. Define chemical action, physical action. Give examples of each. 6. Discuss methods and principles of disinfection after contagious diseases. 7. How may the presence and the amount of urea be determined? 8. Name the metals whose salts are often taken as poisons. 9. Give the chemical differences between chloral and chloroform. 10. Give the chemistry of alcohols and ethers.

PHYSIOLOGY

1. (a) Name and describe two kinds of blood-corpuscles. (b) What is hemoglobin? (c) Mention four functions of blood. 2. Describe in detail the fate of a molecule of sugar after ingestion. 3. (a) State action of the sympathetic and vagus nerves on the heart. (b) Name two classes of vasomotor nerves. (c) Differentiate between arterial and venous flow. 4. Describe the act of respiration and give its function. 5. Name five digestive ferments and give function of each. 6. (a) Describe and give function of the lymphatic system. (b) In what two ways does absorption take place in the alimentary canal? 7. Name five secreting organs and state what each secretes. 8. (a) State function of the kidneys. (b) Give chemical and physical composition of normal urine. (c) How much is normally passed in twenty-four hours? 9. Name the twelve cranial nerves and give their functions. 10. Tell how voice is produced and varied.

SURGERY

1. Discuss acute osteomyelitis. 2. What are the symptoms and diagnosis of intestinal obstruction? 3. Give the symptoms and diagnosis of cerebral abscess. 4. Describe a tuberculous abscess. 5. Give the symptoms, diagnosis and prognosis of fracture of the surgical neck of the humerus. 6. What are the symptoms produced by gall-stones? 7. What are the clinical characteristics of a malignant tumor? 8. Give the symptoms and diagnosis of tuberculosis of the shoulder-joint. 9. Discuss fractures of the upper third of the femur. 10. Discuss congenital club-foot.

OBSTETRICS

1. Describe mechanism in vertex presentation. 2. Describe mechanism in left occipito-anterior presentation. 3. Describe mechanism in face presentation. 4. Briefly describe (a) breech presentation; (b) transverse positions. 5. Mention the varieties of hemorrhage that may affect the pregnant woman, the parturient woman and the puerperal woman. 6. What is placenta prævia? Give its causes, varietics, symptoms and treatment. 7. Name indications for high forceps, and (b) low forceps, and briefly describe the conditions necessary for their use. 8. How would you diagnose the position of the child (outline form)? 9. Give indications and describe in detail manual aid. 10. (a) Give the indications and conditions requiring cesarean section. (b) Describe Sanger's modification.

TOXICOLOGY

1. Give symptoms of an overdose of conium maculatum. 2. Give treatment of an overdose of conium maculatum. 3. Give post-mortem appearance of an overdose of conium maculatum. 4. Give symptoms of poisoning by aconite. 5. Give treatment of poisoning by aconite. 6. Give post-mortem appearance of poisoning by aconite. 7. Give symptoms of an overdose of nitric acid. 8. Give treatment of an overdose of nitric acid. 9. Give post-mortem appearance of an overdose of nitric acid. 10. From a medical standpoint define toxicology.

SYMPTOMATOLOGY

1. Give the causes and symptoms (including the character of the urine) of acute nephritis. 2. What are the symptoms of rheumatic fever? 3. Describe a case of erysipelas. 4. What are the symptoms and commonest complications of diphtheria? 5. Give the symptoms and signs in a case of incipient pulmonary tuberculosis. 6. Describe a case of croupous pneumonia. 7. If an embolus arises from the saphenous vein, where will it lodge and what symptoms will it cause? 8. If an embolus arises from the mitral valve, where may it lodge, and what symptoms will it cause? 9. Describe a case of acute poliomyelitis. 10. Describe a case of paralysis agitans.

Book Notices

DEFORMITIES INCLUDING DISEASES OF THE BONES AND JOINTS. A Text-Book of Orthopedic Surgery. By A. H. Tubby, M.S. (Lond.), F.R.C.S. (Eng.), Surgeon to and in Charge of the Orthopedic Department, Westminster Hospital. Second Edition. Two Volumes. Cloth. Price, $6 net. Illustrated. New York: Macmillan Company, 1912.

This edition of Tubby's work is issued in two volumes. The section on deformities is especially comprehensive and complete. In the chapter on torticollis the theories of the pathogenesis are considered in detail, and the treatment suggested is based on a careful analysis of the conditions. The deductions drawn from comparative results following the various methods for the treatment of congenital dislocation of the hip are moderate but convincing. The chapter on club-foot contains a good classification of this condition. The subject of sclerosis of the spine is not so well treated. Coxa vara and coxa valga are considered at some length and the *x*-ray plates used for illustration are excellent. In considering the etiology of tuberculosis of bones and joints reference is frequently made to the report of the Royal Commission on Tuberculosis. The treatment of sinuses by the use of Beck's paste is referred to. The section devoted to a consideration of tuberculosis of bones and joints is very complete. In the discussion of arthritis deformans nothing is said of the newer theories that the condition may be due to some local focus of infection such as tonsils, cholecystitis, etc. Many very clear *x*-ray plates are used to illustrate cases of malignant tumors of bone. The full bibliography at the end of the chapters makes the work a valuable one for reference and this plan should be commended. As a whole the edition recommends itself to the students of orthopedic surgery. Mechanically the work is well done, the numerous *x*-ray plates being extremely clear and illustrative.

FRANKLIN'S CONTRIBUTION TO MEDICINE. Being a Collection of Letters Written by Benjamin Franklin Bearing on the Science and Art of Medicine and Exhibiting His Social and Professional Intercourse with Various Physicians of Europe and America. By Theodore Diller. Cloth. Price, $2. Pp. 89. Brooklyn: Albert T. Huntington, 1912.

This little book contains an essay which was read in abstract before the Pittsburgh Academy of Medicine, which requested the author to publish it in full. We are given a brief but succinct account of Franklin's life. His close relationship to medicine and to the medical profession is clearly outlined by extracts of his correspondence and by accounts of his participation in the foundation of the Pennsylvania Hospital and the birth of the first medical school in this country. His discovery of Franklinic electricity, his invention of bifocal spectacles, his valuable hygienic teachings, his views as to the contagiousness of colds, and the substantial character of his discussions of various medical topics are set forth largely in his own words by extracts of his correspondence and writings. Though he was not a physician Franklin's contributions to medicine are hardly equaled by any American medical contemporary, and Dr. Diller's book is a valuable addition to our literature because it gives us an adequate idea of the medical services of this great man. The book should have been provided with a title on the back of the cover.

DIE LUNGENSAUGMASKE IN THEORIE UND PRAXIS. Physikalische Behandlung von Lungenkrankheiten, Blutarmut, Keuchhusten, Asthma, Kreislaufstörungen und Schlaflosigkeit. Zusammenfassende Ergebnisse aus Literatur und Praxis. Von Dr. E. Kuhn. Paper. Price, 1 mark. Pp. 25, with 24 illustrations. Berlin: Julius Springer, 1911.

This is a monograph of about thirty pages on the use of a mask, the object of which is to produce a hyperemia of the lungs. The author believes that the hyperemia thus produced acts favorably on a variety of conditions, from tuberculosis to whooping-cough and from auto-intoxication to heart disease. Directions for using the mask are not given, but the author says that such directions will be found accompanying each mask, which reminds one somewhat of the directions found around a bottle of patent medicine. A little more evidence than that presented will be necessary to establish for the mask a prominent place as a therapeutic agent.

Medicolegal

Special Liability of Sellers of Morphin to Married Persons

(Flandermeyer vs. Cooper (Ohio), 98 N. E. R. 102)

The Supreme Court of Ohio holds that one who with knowledge that a husband by the constant and continued use of morphin has become so weakened in body and mind that he is unable to resist his cravings for the drug, and who after the repeated protests of the wife continues to sell morphin to the husband until by the use thereof his mind becomes so impaired and destroyed that it is necessary to confine him in an insane asylum, is liable to the wife for damages for her loss of consortium. And in this case a judgment for $500 in favor of the plaintiff, Mrs. Cooper, is affirmed.

The court says that there can be no reasonable contention but that the wife suffers the same injury from the loss of consortium as the husband suffers from that cause. His right is not greater than hers. Each is entitled to the society and affection of the other. This right is invaded whenever a third person, through machination, enticement, seduction or other wrongful, intentional and malicious interference with the marriage relation, deprives the husband or wife of the consortium of the other. The remedy for an invasion of these rights is not in the nature of the action for damages to means of support provided by the statutes relating to the sale of intoxicating liquors. No enabling statute is necessary to authorize the maintenance of an action for the loss of consortium. Moreover, the plaintiff's rights under the facts and circumstances of this case rested on a broader foundation than the violation of the state statutes regulating the sale of this and kindred poisons, for if in the making of the sales in question these statutes had been observed to the very letter, the sale might nevertheless be unlawful, and the defendant responsible to the plaintiff for the injuries complained of.

Mr. Cooper had been a victim of the morphin habit for many years, and if it be conceded that after he became cured of the habit of using morphin he possessed sufficient intelligence and discretion to control his own actions and safeguard his own welfare, and that under those conditions the defendant had a legal right to disregard the appeal of the wife and to sell morphin to the husband on the theory that the independent act of the husband of injecting it into his veins was the proximate cause of the injury complained of, yet the evidence was very clear that there came a time in the history of these sales when he was no longer a free agent capable of controlling his own conduct and capable of exercising an independent judgment in reference to the use of the drug, but, on the contrary, his intellect had become so weakened and infirm that his power of resisting his craving was entirely destroyed, and he became merely the instrument, or the conduit through which this treacherous poison was transferred from the druggist's hands into his own system. It would be just as reasonable to say that due regard for the rights of others would not require the individual in the ordering of his own affair to take into account the force of gravity, as to say that one, who sells morphin to a person known by the seller to be a helpless victim of this drug, is not required to contemplate the natural and probable result of the use the unfortunate purchaser is sure to make of it.

What Courts Will Not Require of Expert Witnesses Nor Compensate Them For

(People vs. Conte (Cal.), 122 Pac. R. 450)

The District Court of Appeal, Third District, of California says that in this homicide case counsel for the defendant called a physician to the witness stand and asked him to examine a certain rock and say, by a mere inspection and without a microscopic examination or other scientific analysis of some spots on the rock, whether they were blood stains thereon. The physician refused to testify as an expert unless he was guaranteed the usual fee for such services, and counsel for the defendant requested the court to make an order for the payment of such fee out of the county treasury,

declaring that his client was without the means to defray that expense. This the court refused to do. After considerable colloquy between court and counsel, the latter was ordered by the court to put the questions to the witness that he desired to ask, but counsel seemed to insist that some arrangement be first made for the payment of the physician for his services as an expert witness, and that thereupon the latter be given possession of the rock for the purpose of making such an examination thereof as would enable him to determine and say whether the marks which a woman declared were blood stains were or were not caused by human blood. The court denied this request. The court of appeal thinks that the court's action in this matter could not be made the predicate of prejudicial error.

The court of appeals says that at the trial the woman referred to testified that the marks which she took for blood stains had undergone such a change in appearance that she could not then say that they were the result of blood stains, and it was highly probable that, under such circumstances, the physician could not have determined any more than could a lay witness, in the absence of an appropriate chemical analysis of the marks, whether they were caused by blood or produced by some other cause. This court is familiar with no law requiring the court under such circumstances to order the services of an expert witness in behalf of a defendant to be compensated for out of the public funds. The court has no doubt that the physician, having been sworn as a witness, could have been required to answer such pertinent questions as might have been put to him, notwithstanding that they might call for expert testimony, and the physician not recompensed or guaranteed compensation for his services as an expert, but the court knows of no rule of law which would have authorized the court to compel him to go to the trouble and perhaps some expense of scientifically investigating the cause of the marks on the rock for the purpose of qualifying himself to give expert testimony on that subject.

A rehearing in the Supreme Court of California was denied by the latter.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Illinois Medical Journal, Springfield

September, XXII, No. 3, pp. 277-416

1 Life and Work of Dr. Daniel Brainard. E. F. Ingals, Chicago.
2 Menace to Public by Feeble-Minded Persons Living Outside Institutions. T. Diller, Pittsburgh.
3 Border-Line Inferiority. C. F. Read, Kankakee.
4 Segregation and Treatment of Feeble-Minded. J. Punton, Kansas City, Mo.
5 Feeble-Minded and Epileptic. H. M. Cary, Pennhurst, Pa.
6 Criminal Insanity. C. H. Anderson, Menard, Ill.
7 Research in Psychiatry. B. Holmes, Chicago.
8 Tonsillectomy in Children. G. W. Boot, Chicago.
9 Relation of General Practitioner to Fight Against Tuberculosis. O. W. McMichael, Chicago.
10 *Tuberculosis of Patella. J. B. Murphy, Chicago.
11 Antiformin-Sedimentation Method of Sputum Examination for Tubercle Bacilli. A. I. Murphy and J. B. Rogers, Naperville.
12 Nystagmus. L. H. Mettler, Chicago.
13 Acute Inflammation of Thyroid. O. J. Stein, Chicago.
14 Anterior Poliomyelitis. J. H. Bacon, Peoria.
15 Treatment of Cancer High in Rectum. C. B. Davis, Chicago.
16 Importance of Early Recognition and Treatment of Pathologic Conditions of Adenoids and Tonsils. C. J. Whalen, Chicago.

10. Tuberculosis of Patella.—Murphy says that there is about one case of tuberculosis of the patella to twenty or twenty-five cases of tuberculosis of the knee-joint. When tuberculosis is present in the patella, it takes one of two courses. It may extend to the surface and rupture through the skin, forming a sinus leading outward from the tuberculous focus in the patella. The greatest tendency, however, is for the disease to pass inward and attack the joint. The patella is separated from the joint by a thin cartilage, and that cartilage readily yields as the tuberculosis approaches the joint. The tubercular focus ruptures into the knee-joint and causes a greater or lesser degree of synovial tuberculosis. It may involve the other bones secondarily. In one of the two cases reported by Murphy, the patella was almost completely destroyed by the disease. In the other case there was a pathologic fracture, with considerable separation of the fragments.

In figuring out the treatment of these cases Murphy adopted the plan of making an incision along the outer side of the patella up into the vastus externus, removing the entire patella from beneath the aponeurosis patellæ, then dividing the quadriceps tendon by two parallel incisions extending upward from the two parallel incisions above and swinging this flap down over the site of the patella and attaching it by suture to the ligamentum patellæ. In investigating why better results were obtained by treating these fractures ten or twelve days after the initial trauma, the explanation given originally was that the tissues, which had been recently traumatized, were not in a condition to withstand infection; that they were not in as good condition to withstand infection as in the case of a primary operation on the knee-joint, or not in as good condition to withstand an operation as after the occurrence of the traumatic inflammation. Why? Because following a traumatic inflammation, there occurs an intense infiltration; the bone is thickened, with cofferdammed lymphatics. The tissues have reacted to the traumatic inflammation, and offer the greatest resistance against microbic invasion. That, Murphy believes, is the explanation.

Primary wiring of the patella has been abandoned, and secondary wiring of it has been considered a proper and legitimate operation. In his cases Murphy prepared the knee-joint by aspiration, and injected 3 drams of a 2 per cent. solution of liquor formaldehyd in glycerin which produced a severe reaction in the joint. Shortly after this the effusion and pain subsided, and a week from that time he opened the joint and operated. There was no effusion into the joint after the operation. There was no filling of the joint. There was no elevation of temperature; no inflammatory reaction, and he succeeded in getting a good result in both cases.

Military Surgeon, Washington, D. C.

September, XXXI, No. 3, pp. 239-356

17 What Are Best Available Measures to Diminish Venereal Diseases Among Soldiers and Sailors, and Along What Lines Should We Seek the Cooperation of Federal, State and Municipal Authorities? F. M. Bogan, U. S. Navy.
18 Dementia Præcox and Chronic Alcoholism. L. L. Smith, U. S. Army.
19 Bedbug As Carrier of Typhoid. R. E. Riggs, U. S. Navy.
20 Ocular Diseases Incidental to Advanced Life Considered in Connection With Claims for Pensions. L. W. Fox, U. S. Army.
21 Six Hundred Cases of Measles Occurring at Columbus Barracks, Ohio. E. D. Kilbourne, U. S. Army.
22 Fevers of Undetermined Causation. E. R. Whitmore, U. S. Army.
23 Gunshot Fracture of Both Bones of Forearm. Recovery. G. A. Skinner, U. S. Army.
24 Purification of Water by Means of Darnall Filter. L. H. Reichelderfer, U. S. Army.
25 Simple Marker Set for Solution of Medical Field Problems. M. A. W. Shockley, U. S. Army.
26 Ants Destroying Larvæ of Flies. G. P. Stallman, U. S. Army.

West Virginia Medical Journal, Wheeling

September, VII, No. 3, pp. 71-108

27 Obligation of Public to Medical Research Laboratories. F. L. Hupp, Wheeling.
28 Diagnosis and Treatment of Some of Commoner Forms of Kidney Disease. L. F. Barker, Baltimore.
29 Microscope as Aid to Diagnosis. J. W. Lyons, Huntington.
30 Drug Addiction; Cell Destruction; Its Pathology. J. W. Williams, Richmond, Va.
31 *Improved Maxillary Splint. W. P. Megrail, Wheeling.

31. Improved Maxillary Splint.—About 1¼ inches from each end of the Levis maxillary splint drill two crescentric holes, about 1 inch long and ⅜ of an inch wide, are punched ⅝ of an inch apart, parallel with each other and with axis of the splint. The end of a half-yard strip of bandage is passed through one of these holes and out through the adjacent one, and another strip of bandage placed similarly in the other end of splint; then after the splint is applied to the fracture the end of one strip of bandage is tied behind the neck to its fellow of the opposite side and the other two loose ends are tied over the top of the head, as is usual with the "four-tailed" bandage. Secured by this very easy and simple method, the splint is held firmly in place, with no danger of it becoming loose; neither is any additional bandaging required.

Ohio State Medical Journal, Columbus

September, VIII, No. 9, pp. 459-502

32 Complement Fixation Test for Obscure Gonococcic Infections. E. O. Smith, Cincinnati.
33 Mesenteric Ileus. W. J. Gillette, Toledo.
34 Office Treatment of More Common Ano-Rectal Diseases. W. Teachnor, Columbus.
35 Sewage Purification. W. C. Folsom, Cincinnati.
36 Present Status of Feeding Young Children. E. S. Everhard and G. Felker, Dayton.
37 Choice of Anesthetics from Standpoint of Surgeon With Special Reference to Nitrous Oxid and Oxygen. R. E. Skeel, Cleveland.

Journal of Experimental Medicine, Lancaster, Pa.

September, XVI, No. 3, pp. 249-304

38 *Nature of Bactericidal Substance in Leukocytic Extract. W. H. Manwaring, New York.
39 *Pure Cultivation of Spirochæta Phagedenis (New Species), Spiral Organism Found in Phagedenic Lesions on Human External Genitalia. H. Noguchi, New York.
40 *Studies in Ferment Action. II. Extent of Leukocytic Proteolysis. J. W. Jobling and S. Strouse, Chicago.
41 *Comparison of Simultaneous Polygraph and Micrograph Tracings. F. S. Meara, H. Coffen and A. C. Crehore, New York.
42 Study With Electrocardiograph of Mode of Death of Human Heart. G. C. Robinson, New York.
43 *Nitrogen and Nuclein Metabolism in Gout. P. A. Levene and L. Kristeller, New York.
44 *Duration of Immune Bodies in Blood After Antityphoid Inoculation. M. Wollstein, New York.
45 Post-Hemorrhagic Anemia. L. S. Milne, New York.
46 Complement Fixation in Syphilis With Spirochete Culture Antigens. C. F. Craig and H. J. Nichols, U. S. Army.
47 Retention of Foreign Protein by Kidney. R. M. Pearce, Philadelphia.
48 Relation of Spleen to Blood Destruction and Regeneration and to Hemolytic Jaundice. R. M. Pearce, J. H. Austin and E. B. Krumbhaar, Philadelphia.
49 *Idem. R. M. Pearce, J. H. Austin and A. B. Eisenbrey, Philadelphia.

38. Bactericidal Substance in Leukocytic Extract.—The bactericidal agent extracted from horse leukocytes, Manwaring found, is apparently precipitated quantitatively by full saturation with ammonium sulphate. The bactericidal agent is apparently precipitated by absolute alcohol, and is not rendered insoluble by a short contact with alcohol. The agent resembled in this feature certain enzymes which can be isolated and purified by alcoholic precipitation.

39. Pure Cultivation of Spirochæta Phagedenis.—A hitherto undescribed spiral organism has been isolated by Noguchi in pure culture from a case of mild phagedenic ulcer on the external genitalia of a woman. For this organism the name *Spirochæta phagedenis* is proposed. *Spirochæta phagedenis* is a strict anaerobe and grows in the presence of fresh tissue in ascitic agar. It produces no apparent change in the media, but a somewhat offensive odor develops in the culture tube. *Spirochæta phagedenis* incites a slight inflammatory reaction in the skin of a *Macacus rhesus* monkey and in the skin and testicles of rabbits. Its etiologic relation to the phagedenic lesions on the external genitalia has not yet been determined.

40. Studies in Ferment Action.—The authors believe that their work proves that the proteolytic action of leukocytes is not a simple cleavage by one ferment. There are present two proteases, one acting in an alkaline medium and the other in an acid medium. This confirms Opie's work. In the leukocytes there was found in addition an ereptic ferment which is capable of acting in an acid or alkaline medium. Since this action is lost by heating to 70 C., and by drying and keeping the leukocytes, it probably represents a ferment which acts on the digestion products of the two proteases. Analogy with other ferments in the body confirms this opinion.

41. Polygraph and Micrograph Tracings.—From a study of a considerable number of tracings the authors conclude that the delicate mechanism of the micrograph registers the movements in the heart and blood-vessels more accurately than does the polygraph. The inertia of the polygraph lever and diaphragm distorts the tracing. The difference between the results obtained with the two instruments is shown by the records made simultaneously with the micrograph and the polygraph. The micrograph is particularly useful for recording heart sounds. Some records illustrating this are shown. The authors are directing special attention to this and will report the results in a subsequent paper. While the micrograph will not supersede the polygraph or electrocardiograph, they feel that it has distinct possibilities as a clinical instrument.

43. Nitrogen and Nuclein Metabolism in Gout.—The observations recorded by Levene and Kristeller were made on a patient in a very advanced stage of gout. Very large gouty deposits in nearly all joints prevented him from any active movements. The patient was at first placed on a daily diet containing about 6 grams of nitrogen. When the daily output became fairly constant (about 5½ grams), the experiments were begun. These consisted in the addition of urea to the normal diet. The urea was added to the first morning meal and the nitrogen output was followed in twenty-four hour periods, day by day. In a similar manner experiments were carried out with asparagin, plasmon, uric acid and nucleic acid. It was observed that after the administration of very simple nitrogenous substances, such as urea and asparagin, the patient did not remove the surplus nitrogen in the same manner as a normal individual, or even as the patient with granular nephritis who was placed on a low nitrogen intake. The increase in the nitrogen output was comparatively low during the first twenty-four hour period, and this slightly increased excretion usually continued for several days.

This suggested a comparison of the character of nitrogen elimination when the patient was placed on a daily diet containing about 13 grams of nitrogen. On this diet, after administration of urea, the rise in the nitrogen output took place with greater rapidity and with greater intensity than on the low protein diet. Also the nitrogen output in the intervals between the experiments appeared to be more uniform than when the patient had been on a low protein intake. For this reason it was decided to perform a new series of experiments, placing the patient on a diet abundant in nitrogen. But even under these conditions the increase in the output of nitrogen, after the administration of additional nitrogenous substances, was very low and protracted. This made it difficult to detect the differences in the output during the intervals between experiments and during the days of the experiments.

A new series of experiments was then performed, in the course of which the additional nitrogenous products were added, not during one day, but during three or four consecutive days, and the output of nitrogen was followed in twenty-four hour periods for a number of days. But this change in daily nitrogen intake brought little change in the results of the experiments, for the increase in nitrogen output after the administration of nitrogenous substances was rather insignificant, and the excretion was very often protracted. For the sake of convenience, therefore, it was decided to estimate the increase in the nitrogen output during the days of the experiment and during the two days following the experiment.

While the patient was under observation, which was for three winter terms, it was noticed that after the administration of purin bodies, the nitrogen output in animals had a more regular course if they received simultaneously considerable quantities of sodium bicarbonate. It was, therefore, decided to repeat the experiment on the patient, administering to him daily 15 grams of this salt. It seemed that under these conditions the patient removed the surplus nitrogen intake with greater rapidity than without the bicarbonate of soda.

44. Duration of Immune Bodies in Blood.—In a series of twenty-four persons inoculated by Wollstein with antityphoid vaccine, the immune bodies in the blood reached their height within two months after the first inoculation, or one month after the third, then fell rapidly within the next two months. Only nineteen of the cases could be followed longer, and eight of these were negative for bactericidins within ten months after inoculation and fifteen were negative after thirteen months. Only one serum reacted in a dilution of 1 to 1,200 at the end of thirteen months. The addition of lecithin to the vaccine did not influence the local reaction after inoculation, nor did it appreciably affect the formation of immune bodies to the typhoid bacillus.

49. Blood Destruction and Regeneration.—The results of this study are stated as follows: Rapid injection of more

than 0.06 of a gram per kilo of hemoglobin intravenously into a normal animal is followed by the appearance of hemoglobin in the urine (pelvis of kidney) within eight to ten minutes. After rapid injection of more than 0.012 of a gram per kilo per minute of hemoglobin, 16 to 36 per cent. of the total amount, if this equals 0.25 of a gram per kilo, is eliminated in the urine and is accompanied by choluria. If the injection of not more than 0.35 gram per kilo is made slowly (less than 0.01 gram per kilo per minute), the amount eliminated in the urine is only 2.33 to 9.5 per cent. of the total amount injected, and choluria does not occur. The concentration of free hemoglobin in the blood which constitutes the threshold value of the kidneys for hemoglobin is approximately 0.06 gram of hemoglobin per kilo of body weight. When about this concentration is reached, hemoglobin appears in the urine. The amount of hemoglobin per kilo of body weight which, after rapid injection, may be retained without jaundice, is approximately 0.18 gram. When 0.22 or 0.23 gram is retained bile pigments appear in the urine. The threshold of the liver for jaundice in point of hemoglobin saturation lies, therefore, between 0.18 and 0.22 gram per kilo of body weight. With slow injections a greater amount may be retained without choluria.

The absence of the spleen does not alter greatly the percentage of hemoglobin eliminated by the kidney, nor does it raise the threshold of the liver for jaundice. In the presence of jaundice, either hemolytic or obstructive, the amount of hemoglobin retained by splenectomized animals is slightly diminished and that eliminated by the kidneys is correspondingly increased.

On these data the authors base the following explanation of the mechanism by which free hemoglobin is removed from the blood-serum. Hemoglobin is not removed by the kidney until its concentration in the blood-serum reaches a certain level (0.06 gram of free hemoglobin per kilo of body weight). This constitutes the threshold value of the kidneys for hemoglobin and when it is reached hemoglobin appears in the urine. When the concentration is lower, hemoglobinuria ceases; at the same time, however, the liver, and possibly other tissues, take up hemoglobin as soon as mere traces are present in the serum and they continue this removal whether the renal threshold is exceeded or not. The two processes go on simultaneously, the rate of removal, when the renal threshhold is exceeded, being for the kidneys 17 to 36 per cent., and for the liver and other tissues 64 to 83 per cent. of the total amount introduced. The hemoglobin which is removed by the liver is transformed into bile pigments. If the amount reaching the liver is small and is received slowly, the amount of bile formed is not increased above the excretory capacity of the liver, and it is removed by the bile passages without the occurrence of choluria. This is shown in their experiments in which injections of hemoglobin were made more slowly than 0.01 gram per kilo per minute. On the other hand, if the hemoglobin is taken up by the liver rapidly and in large amounts, the bile capillaries are overtaxed and the bile cannot be rapidly removed, but is reabsorbed into the blood, and choluria develops.

If this theory is correct it affords an explanation of those instances of blood destruction in man characterized by jaundice, but not accompanied by hemoglobinuria. In a slow, gradual destruction of red blood-cells, the liver removes the hemoglobin from the serum so rapidly that the concentration of hemoglobin in the serum does not reach the threshold value of the kidneys and hemoglobinuria, therefore, cannot occur. The constant absorption of large amounts of hemoglobin by the liver and the increase in bile formation which results does, however, overtax the bile passages and jaundice occurs. In the same way may be explained the continuance of jaundice after the disappearance of a transient hemoglobinuria.

Northwest Medicine, Seattle

September, IV, No. 9, pp. 261-292

50 Workmen's Compensation. C. A. Pratt, Tacoma, Wash.
51 Diagnosis of Surgical Lesions from Standpoint of General Practitioner. R. H. Fowler, Brooklyn.
52 Disinfectants and Disinfection. E. P. Fick, Seattle.
53 Bubonic Plague. B. J. Lloyd, Seattle.
54 Uncinariasis. S. C. Slocum, Portland, Ore.
55 Convergent Strabismus in Children and Its Treatment. J. L. McCool, Portland, Ore.
56 Bacteriology of Diphtheria. R. W. Ashley, Salt Lake City, Utah.
57 Anatomy of Anal Canal and Its Bearing on Etiology and Treatment of Some Common Rectal Diseases. A. C. Crookall, Seattle.

American Journal of Urology, New York

September, VIII, No. 9, pp. 455-510

58 *Conclusions Drawn from One Hundred Prostatectomies. O. C. Smith, Hartford, Conn.
59 Phimosis: Its Relation to Some of More Frequent Genito-Urinary Diseases. W. S. Reynolds, New York.
60 *Sigmoido-Vesical Fistula: Report of Two Cases. J. L. Boeum and J. M. Dean, St. Louis.
61 Dilatation, Irrigation and Medication of Urethra With a New Sound. A. L. Soresi, New York.
62 Two Cases of Chronic Cystitis of Unusual Origin. (Cystitis Cystitica and Leukoplakia Vesicae). J. E. Zipser, New York.

58. **One Hundred Prostatectomies.**—In relation to the etiology of the senile prostate, Smith concludes from the histories in this series of 100 cases that Neisserian infection and chronic urethritis are factors of comparatively rare incidence, rather than predominating, as earlier literature would lead us to believe. As to spheres of life and occupational incidence, he feels that no definite conclusions can be drawn. His patients have come, as a rule, from the upper walks of life, have included a number of professional men of comparatively sedentary habits, and a number of farmers, a few mechanics, but no laborers in the usual acceptance of the term. This may be largely due to the fact that this class do not live to the age incidence of prostatic disease. The pathology of the prostates removed shows at least 16 per cent. to have been malignant, this series including one sarcoma; and 2 per cent. to have been tubercular. The balance, or 82 per cent. have been benign growths, the increase in glandular, muscular and fibrous tissue varying greatly in different specimens. A few of the earlier cases, which looked benign, escaped critical microscopic examination. Undoubtedly more thorough pathologic work would have given a somewhat higher percentage of malignancies.

This series of cases is divided into four sub-series of twenty-five each, these divisions marking changes in the technic and advances in preliminary preparations and post-operative treatment, and the wiser selection of operative risks. The first twenty-five cases were performed through a median perineal incision, the prostate being drawn down by the rubber tractor of Parker Sims. Practically all the cases were in the third stage of the disease; that is, either suffering from complete obstruction and sepsis, or from the terminal conditions of hemorrhage, urinary extravasation, pyelitis, cardiovascular changes, emaciation and failing health. For this series of twenty-five, the fatalities attributable to operation were four, three of the four deaths being due to post-operative pneumonia, and one to intestinal infection. The operations were frequently performed in emergency at the homes of the patients, in some instances in remote regions. The rectum was injured twice during this series, an accident which has not occurred during the following seventy-five cases. Stones were left in the bladder or formed soon after operation in two cases. Epididymitis occurred in 15 per cent. Of these twenty-five patients operated on between eight and ten years ago, 50 per cent. are still living, a number of them over 80 years of age.

The second series of twenty-five was performed by the perineal route, by the dissecting method of Young. The mortality attributable to operation for this series was six, one death being from pneumonia, one from cerebral effusion, one from cardiac failure, one from septicemia from urinary infiltration, one from shock and hemorrhage and one from anuria. To the after-treatment was added forced water drinking, the earlier removal of the drainage tube, continuous irrigations for a varying period in the cases of badly infected bladders, and the patients out of bed at an earlier date. The third series of twenty-five were performed by the perineal route without the use of a bladder tractor, and by the median perineal incision and digital enucleation with the ungloved finger. But one death occurred, and that was due to a remote cause.

60. Sigmoidovesical Fistula.—For two years the authors' patient complained of pain in the left lumbar region and had passed blood from the bowels at times, attributing this to hemorrhoids. Soon after this she noticed some pus passing with her stool. Pain was never constant. Since passing pus from the bowels she had more distress in the lumbar region. Three weeks preceding her first visit she passed about a pint of blood from her urethra. This was about a week after menstruation had ceased. From that time on the pains were constant and severe, and excruciating when the bowels moved, especially in the bladder and urethra. She took frequent laxatives, as magnesium sulphate and citrate; these would increase the urethra pain on urination.

The clinical history reads: Frequent desire to urinate, with no relief after micturition. Passes an ounce or less each time and arises at least three times each night to micturate. Feels as if bowels want to move very frequently. Straining at stool constantly, she says she feels as if some obstruction is near the anus. She passes fecal matter per urethram, molded in a shape conforming to urethra. Severe pains radiating to lumbar region starting in left iliac fossa, and also down the thigh to the knee. One of these attacks was like a renal colic. Hot and local applications gave no relief. Eating of foods rich in cellulose, such as beans, etc., produced more distress.

Vaginal examination showed a rectocele and vesicocele, no fistulous communication between the vagina and bladder or bowel. Bladder catheterized showed thick purulent urine mixed with fecal matter. After washing bladder a long time they succeeded in getting a return flow fairly clear, and then cystoscoped, showing a most severe cystitis diffused throughout the bladder, with large areas of denudation. In the extreme upper left angle of the fundus was noticed a dark area, thought to be a pocket, and on moving the cystoscope up near it the beak of the instrument entered this space. Realizing that they had a hole in the bladder wall, an assistant was asked to insert a rectal tube and inject methylene blue solution into the bowel which showed that the blue solution quickly trickled into the bladder. Abdominal section disclosed adhesion between the sigmoid flexure, left fallopian tube and bladder. A large sinus existed between the bladder and sigmoid, through which the tip of the little finger would pass, and fecal matter was escaping into bladder. The sinus was resected by removing the sigmoid and portion of the bladder. The upper end of the colon was united to the rectum. The opening of the bladder was difficult to close on account of the wall being so indurated. The defect in the bladder was closed by suturing the fundus of uterus to the bladder. Bladder was drained by catheter. Patient succumbed to peritonitis three days after operation.

Journal of Maine Medical Association, Portland

September, III, No. 2, pp. 931-974

C3 Conservation of Cardiovascular System. H. A. Milliken, Hallowell.
C4 Leukemia. G. A. Coombs, Augusta.
C5 Contagious Diseases. G. H. Coombs, Waldoboro.
C6 Worry. W. F. Hart, Camden.

American Journal of Public Health, New York

September, II, No. 9, pp. 665-752

C7 Quantitative Study of Bacteria in City Dust With Special Reference to Intestinal and Buccal Forms. C. E. A. Winslow and I. J. Kligler, New York.
C8 Successful Efforts of a Small City to Secure a Milk Supply from Tuberculin Tested Cows. C. H. Wells, Montclair, N. J.
69 *Use of Fish as Sanitary Measure to Eliminate Mosquitoes. M. McMillan, New York.
70 Legislation Proposed To and Enacted By General Court of 1912. M. W. Richardson, Boston.
71 Municipal Hospitals for Contagious Diseases. S. S. Woody, Philadelphia.

69. Fish as Sanitary Measure to Eliminate Mosquitoes.—McMillan's observation as regards the destruction of mosquito larvæ in deposits where fish had been introduced, was that fish from one month old on, destroy the larvæ when found by them, without regard to the class of larvæ. They will destroy the larvæ of the "Culex Pipiens" or the "Anopheles," as well as that of the "Stegomyia." She provided a 500-gallon deposit with six fish, and allowed the deposit to remain uncovered and open to the air, giving free access for mosquito propagation in it. The jar contained numerous larvæ on the introduction of the fish; but McMillan could demonstrate no larvæ after four days, and no further propagation occurred while the fish were present, the water in the jar remaining clear and palatable, and free from algæ, as well as larvæ. These fish will live on algæ and infusoria when larvæ are not present.

Albany (N. Y.) Medical Annals

August, XXXIII, No. 8, pp. 439-500

72 Mineral Springs of Saratoga. G. H. Fish, Saratoga Springs, N. Y.
73 Anti-Typhoid Inoculation. P. P. Gregory, Albany.
74 Lord Lister and Era of Modern Surgery. W. H. Seward, Albany.

September, XXXIII, No. 9, pp. 501-562

75 Medical Work in State Hospitals. C. W. Pilgrim, Poughkeepsie, N. Y.
76 Toxic Deliria: Report of Cases. N. A. Pashayan, Schenectady, N. Y.
77 Small-Pox and Vaccination. F. C. Curtis, Albany.
78 Treatment of Summer Diarrhea in Infants. H. Rulison, Albany, N. Y.
79 Plea for Early Diagnosis in Surgical Affections. A. H. Traver, Albany, N. Y.

Colorado Medicine, Denver

September, IX, No. 9, pp. 249-281

80 Anaphylaxis. P. Hillkowitz, Denver.
81 Spontaneous Rupture of Uterus. S. D. Van Meter, Denver.
82 *Suprapubic Prostatectomy; With Method for Control of Post-operative Hemorrhage. L. Freeman, Denver.
83 Sacro-Iliac Joint. H. W. Wilcox, Denver.
84 Normal and Diseased Singing Voice. Z. von Dworzak.
85 Rocky Mountain Spotted Fever. C. E. Walbrach, Denver.
86 Nitrous Oxid Oxygen Anesthesia in Major Surgery. C. G. Parsons, Denver.
87 So-Called Arthritis Deformans With Special Reference to Its Pathology. L. W. Ely, Denver.
88 Method of Localizing Long Saphenous Vein in Thigh. F. W. Cochems, Salida.

82. Suprapubic Prostatectomy.—The weak point in the suprapubic operation according to Freeman has been the control of hemorrhage. The simplest and most reliable way is to pack the bleeding cavity with a long strip of iodoform gauze, or gauze soaked in some styptic material. The end last inserted is retained in the grasp of a pair of large clamp-forceps, preferably with a square, blunt end. The handles of these forceps project through the hole in the bladder, and for some distance beyond the abdominal wound. It is evident that properly graduated pressure on the gauze packing by means of these forceps will control the hemorrhage. This pressure is readily obtained by passing an ordinary rubber bandage around the patient's body beneath the pelvis and over the notch between the locked handles of the instrument. Gauze pads are now adjusted about the handles in such a way as to incline them at any desired angle, thus regulating the direction of the pressure, which should not be greater than necessary, and the whole is held in place by adhesive strips and an ordinary bandage. It is obvious that this method of controlling hemorrhage may sometimes be useful under other circumstances; for instance, in hepatic and pancreatic surgery.

New Mexico Medical Journal, Las Cruces

September, VIII, No. 6, pp. 353-376

89 Cholelithiasis, With Case Reports. F. W. Noble, Las Vegas.
90 Significance of Leukocytosis in Surgery. J. S. Mason, Albuquerque.

Boston Medical and Surgical Journal

September 12, CLXVII, No. 11, pp. 347-382

91 *Operative Treatment of Gastro-Enteroptosis. J. Ransohoff, Cincinnati.
92 Medical Aspect of Intestinal Adhesions and Ptoses. J. M. Jackson, Boston.
93 Dangers Incurred As Result of Non-Recognition of Acute Aural Infections, With Statistical Data. F. E. Kittredge, Nashua, N. H.
94 Inversion of Uterus. H. F. Day, Boston.

91. Treatment of Gastro-Enteroptosis.—The following theses summarize Ransohoff's views on the operative treatment of gastro-enteroptosis:

1. Every case of visceral sagging should be studied individually, and should not be treated in a routine way, whether conservatively or by operation.
2. If after the removal of the normal or nearly normal appendix the patient continues to suffer, he should not be lightly classed among the hopeless neurotics. It is probable that the surgeon has overlooked some visceral displacements or adhesions which are the cause of the suffering.
3. A small incision in abdominal work of the kind under consideration has signal disadvantages.

4. The conclusion of the internists based on laboratory findings as, for example, after ingestion of a test-meal, cannot be made the basis of the functional capacity of the stomach under every-day conditions.
5. In many seemingly hopeless cases of gastro-enteroptosis with marked neurasthenic symptoms operation promises relief. If this is the result of suggestion it is none the less valuable if the relief is permanent.
6. While, of course, internal treatment, abdominal supports and postural treatment should be tried, operative interference should not be unnecessarily delayed lest the habitus nervosus becomes too deep-rooted to be eradicated.
7. No gastroptotic patient should be operated on unless some actual functional disturbance can be demonstrated. To relieve this must be the aim of the operation.
8. Given a visceroptosis in which we can demonstrate distinct functional incompetence or deviations, the existence of nervous phenomena does not militate against operation but may be the chief reason for performing it.

Journal of Ophthalmology and Oto-Laryngology, Chicago

August, VI, No. 8, pp. 253-286

95 Systemic Infection Through Pharyngeal Lymphoid Ring Calling for Surgical Intervention. C. B. Wylie, Chattanooga, Tenn.
96 Importance of Accurate Refraction. W. H. Crisp, Denver.
97 Eustachian Bougies of Fuse Wire. J. S. Weaver, Kansas City, Mo.

Medical Record, New York

September 14, LXXXII, No. 11, pp. 461-506

98 *Sanatorium Treatment of Tuberculosis. L. S. Peters and F. S. Bullock, Silver City, N. M.
99 *Three Hundred Patients Treated by Autogenous Bacterial Vaccines. H. A. Craig, New Brighton, N. Y.
100 Institutional Treatment of Arthritis Deformans. S. W. Boorstein, New York.
101 *Keratitis Neuroparalytica After Removal of Gasserian Ganglion. W. B. Weidler, New York.
102 Diagnosis of Gall-Stones. W. D. Hamilton, Columbus, O.
103 Abortion: Its Social and Ethical Aspects. C. E. Nammack, York.

98. **Treatment of Tuberculosis.**—For the past three years the authors have continually used autogenous vaccines in all cases of tuberculosis showing a daily range of fever above 101 F. Lately they have been giving them in all cases with a temperature curve over 100 F. It is a matter of routine with them first to employ an autogenous vaccine in all patients with a fever above 100 F. Then if they get no appreciable result they begin the administration of tuberculin, using the one in conjunction with the other. So far their results have been such as to justify them in a continuation of this form of treatment, and, clinically speaking, they feel that there is much of good to be derived from the application of Wright's theories of vaccine therapy. They make the vaccines in their own laboratory; give the injections at weekly intervals, starting with an average dose of one hundred million dead bacteria and gradually increase the dose unless contraindicated. The length of time of treatment is guided entirely by results, some patients taking injections for as long as eighteen months.

In the fever cases showing a temperature curve from 99 to 101 F. tuberculin is the most efficient measure at their command and often succeeds when complete immobilization has failed. Although reactions should be guarded against, at times they occur and everyone no doubt recalls the marked improvement and sometimes cure following such overdosage.

The procedure which they have practiced for the past three years may be described as maintenance of an effective dose in either febrile or afebrile cases, and raising the dose when it has become enfeebled by repetition as confirmed by absence of clinical effect. A patient exhibits a persistent maximum temperature of 99.3 F. The dose is gradually raised until an effective point is reached, one which reduces the temperature. This dose is then repeated until a rise again occurs, when the dose is not lowered but raised, following the temperature up as it were in an attempt to again reach an effective dose until gradually the temperature drops to and is maintained at normal. This fortunate result having been observed they are guided in the dosage by principles which obtain in normal temperature cases in which general clinical effect is the guide for repeating or raising the dose.

99. **Autogenous Bacterial Vaccines.**—In a personal administration of over one thousand doses of autogenous vaccines, Craig cannot recall a single instance where any evident harm resulted. There were no cases of hypersusceptibility or anaphylaxis, and no evidence of bad effects due to the so-called negative phase. He says that the treatment cannot take the place of surgery, but in many instances it is a very useful adjunct to surgical procedures. It does not interfere with old established methods of treatment, as they can be carried out in conjunction with the treatment, if thought advisable. It is simply a great addition to our armamentarium in the treatment of bacterial infections.

101. **Keratitis Neuroparalytica.**—Weidler is of the opinion that paralysis of the trigeminus or removal of the Gasserian ganglion with trophic disturbances should be regarded as the cause, and the absence of the lachrymal secretion, the presence of a foreign body, anesthesia of the cornea, and the presence of some bacteria of suppuration should all be considered as contributing causes or factors. It is not necessary for all of these last named to be present to have this form of keratitis develop, but one or more of these factors are usually present in every case of neuroparalytic keratitis. The two cases that are reported in this paper are examples of this form of keratitis after the removal of the Gasserian ganglion.

New York Medical Journal

September 14, XCVI, No. 11, pp. 513-568

104 Inheritance of Acquired Characters. J. Wright, New York.
105 *Polyneuritis With Radicular and Spinal Cord Involvement. W. M. Leszynsky, New York.
106 Pathologic Changes of Pharyngeal Mucosa an Early Symptom Pathognomonic of Poliomyelitis. M. Neustaedter, New York.
107 *Crotalin Treatment of Epilepsy. R. H. Spangler, Philadelphia.
108 Drainage of Acute Infectious Lesions of Abdominal Cavity. J. W. Kennedy, Philadelphia.
109 Community and Health. M. S. Macy, New York.
110 Medical Corps and Medical Reserve Corps of United States Army. A. W. Williams, Philadelphia.
111 Some Phenomena of Modern Practice of Medicine. G. W. McGregor, Littleton, N. H.
112 Rheumatic Fever. A. M. Nodine, New York.

105. **Polyneuritis.**—In the case reported by Leszynsky, that of a young man, 21 years of age, there was a slowly progressive development of atrophy and paralysis beginning in the ulnar distribution of the left hand until claw hand resulted; some atrophy in both shoulder girdles; a lesser involvement of the ulnar group in the right hand; vasomotor paresis in both hands; absence of subjective sensory symptoms; no pupillary disturbance. Several months after the onset the lower extremities became implicated, the paralysis being limited to the peroneal group on both sides. An area became evident of sensory disturbance over the trunk on the left side affecting all forms of sensibility, and an area of incomplete thermoanesthesia over the inner aspect of the left arm. At the end of a year there was a rapid exacerbation of the symptoms in the lower extremities, at which time there was complete bilateral foot drop, hypotonia, ataxia, absence of all reflexes, and slow urination. This continued for a few months, when rapid improvement began and gradually terminated in complete recovery. It will be noted that the left side was principally affected, the sensory symptoms being confined to that side. The duration of the disease was one year and eight months.

107. **Crotalin in Epilepsy.**—The crotalin solution which Spangler has used in eight typical cases of idiopathic epilepsy was made from the dried, yellowish, crystallike scales of the evaporated venom of *Crotalus horridus*. The venom is obtained from the living reptile and dried between glass plates, under a bell jar, in the sun. A solution is then made by dissolving the crystals in glycerin and sterile water, to which a few drops of trikresol is added as a preservative. The solution is then put in sterilized ampules containing 1 c.c. of whatever strength is desired. The dose given ranged from 1/200 to 1/25 of a grain.

He found that not only are the virulence and number of epileptic fits favorably influenced by the crotalin treatment, but the excitability of the nervous system is modified and the general health of the patients, their mental faculties, and metabolism in every respect are considerably improved. The quality of the blood, and possibly its chemical composition, seem to be affected by the injection of the venom. As to the exact effect it has on the coagulability of the blood, further observation is necessary. There is no danger in the use of crotalin as long as the necessary aseptic precautions are taken in its administration, and the treatment is carried out with careful observation of its effect on the patient.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Indian Medical Gazette, Calcutta

August, XLVII, No. 8, pp. 301-340

1 Nastin Treatment of Leprosy. L. B. Scott.
2 *Mongolian Birth Marks. An Anthropologic Study. L. G. Fink.
3 Insanity in Andamans. J. M. Woolley.
4 *Cases of Hydatid Cyst. T. Jackson.
5 *Multiple Echinococcal Infection of Abdominal Viscera. T. S. Tirumurti.
6 Peculiar Fever Met with on Northwestern Frontier. J. Husband and H. V. Hodge.
7 Observations on Three Hundred Cases of Guinea Worm. P. K. Chitale.
8 Large Renal Calculus. H. B. Steen.

2. **Mongolian Birth-Marks.**—In Fink's opinion the spots do not in any way point to an abortive spina bifida. The spots and patches occur not merely in the region of the spine, but in other parts of the back, sides, abdomen, etc. He says that by no stretch of the imagination could these be regarded as abortive cases of spina bifida. During eighteen years' service in Burma he does not recollect ever seeing a single case of that disease. In the Myaungmya district the patches are found on at least 90 per cent. of infants, and yet not a single case of spina bifida has been seen. The condition appears to be equally rare in China. The blue marks first described by Bealz appear to be merely a hereditary Mongolian characteristic and are a valuable test in anthropology.

4. **Cases of Hydatid Cyst.**—During the past fifteen months Jackson has come across five cases of hyatid cyst. (1) A cyst in Tenon's capsule; (2) cyst of liver; (3) two large hydatid cysts of the liver, one in the left lobe and the other in the right lobe; (4) hydatid cyst of the liver, affecting its right lobe; (5) cyst attached by pedicles to the small intestines and bladder. The tumor was opened and another white sac was seen inside which was somewhat jelly-like.

5. **Multiple Echinococcal Infection of Abdominal Viscera.**—On opening what looked at first sight to be the abdominal cavity, Tirumurti found a very thick-walled hydatid cyst containing a large number of daughter and granddaughter cysts with large flakes of a pultaceous, greenish material which was the granular layer of the cyst wall, but none of the abdominal viscera could be seen. The thickness of the cyst wall was nearly half an inch. On continuing to open the cyst, it was found to be in front of the peritoneum to which it was firmly adherent throughout. Into this large main cyst, projecting from the left side to the middle line and filling up the left upper half and more of the abdomen, there was a large smooth, firm tumor covered with a dense white capsule. This, on examination, was found to be the spleen, which was greatly enlarged, and which had a big hydatid cyst, about the size of an average man's head, occupying its upper and outer part and being tightly packed with a large number of daughter and granddaughter cysts with large flakes of the soft greenish granular layer of the cyst detached from its wall. The cyst appeared to have originated outside the parenchyma of the spleen, but under its capsule. As the main cyst was completely extraperitoneal and filled nearly the whole abdomen, the stomach and intestines were enclosed in a comparatively small bag of peritoneum beneath the liver and in the right half of the abdomen. The liver was enlarged; the right lobe was indented above by the pressure of a cyst, about the size of a hen's egg, situated beneath the diaphragm; four smaller cysts were found in the substance of the liver. The thick white walls of the liver cysts collapsed as soon as they were opened, and were very easily detachable from the liver parenchyma. The mesentery and omentum contained a large number of very small intraperitoneal cysts. The kidneys were markedly cirrhotic, but had no cysts in them. Stomach, intestines, lungs and heart were free from them. As the patient presented no cerebral symptoms, the brain was not examined.

Medical Press and Circular, London

August 7, XCIV, No. 3822, pp. 125-148

9 Digestive Uremia Simulating Cancer of Pylorus. M. Castaigne.
10 Surgery of Large Bowel. F. T. Paul.
11 Necessity for Necropsy in Every Case of Death. J. C. McWalter.
12 Deep Petrissage of Abdomen as Aid to Diagnosis of Tapeworm. R. J. Cyriax.
13 Some Medical Aspects of Eugenics. A. F. Tredgold.

August 14, XCIV, No. 3823, pp. 149-174

14 Other Disorders of Impeded Respiration. M. Collier.
15 Epidemic Gastro-Enteritis. H. L. MacCarthy.
16 Influence of Segregation on Prostitution and on the Public. H. A. Kelly.
17 Suppression of Tuberculosis in Ireland. S. Agnew.
18 Formation of State Medical Service. R. R. Rentoul.

August 21, XCIV, No. 3824, pp. 175-198

19 Treatment of Biliary Vesicular Colic. P. Lereboullet.
20 Epidemic Diarrhea. J. Allan.
21 *Effect of Certain Cardiac Remedies on Arterial Pressure. J. Burnet.
22 Prevention of Cancer. J. F. Little.
23 Material Obligations of Spiritualism and Allied Phenomena. T. C. Shaw.
24 Proposed Public Dental Service. R. R. Rentoul.

21. **Effect of Cardiac Remedies on Arterial Pressure.**—The drugs Burnet experimented with were digitalis, strophanthus, squills, strychnin and caffein. He tested the effect of tincture of digitalis on the arterial pressure in twenty-five cases of disease, including such conditions as mitral incompetence, aortic incompetence, anemia with palpitation, arteriosclerosis, tachycardia after influenza, and exophthalmic goiter. In none of these cases was there any effect whatever observed on the blood-pressure even when the drug was given in doses of 15 minims every four hours. In some cases the blood-pressure registered 160 or over, but even here there was no tendency to its increase. On the contrary, in one case of chronic interstitial nephritis with marked arteriosclerosis and emphysema the patient's condition greatly improved after the administration of tincture of digitalis in 10-minim doses three times a day for several weeks with intermissions of three or four days. Incidentally he observed that greater benefit usually resulted when the drug was given in large doses (i. e., 10 to 15 minims) than when it was administered more sparingly. He also tested the action of digitalis on a few healthy individuals, or at least healthy so far as their cardiovascular condition was concerned, himself included. His own arterial pressure was found to vary little from 120 mm., and even when he took as much as 15 minims of tincture digitalis every four hours the mercury column did not alter, nor did he experience apy diuretic effect from the drug. He carried out seven sets of observations with strophanthus. All the patients suffered from valvular lesions. In all cases it produced diuresis, but only in four of the cases was any rise of blood-pressure observed, and in all of these there was marked arteriosclerosis present, so that he is not certain whether the rise is to be attributed merely to the effect of the drug, especially as in the other three cases there was no rise recorded, although the tincture was steadily pushed to the most extreme limit of toleration. Squill, Burnet found, in three cases observed, varied greatly in its effects. In one of the cases Burnet found no alteration in arterial pressure after the exhibition of 15 minims of tincture scillæ every four hours for ten days. In another case the pressure, which was 150 mm. at the start, rose to 160 mm.; while in the third case the sphygmomanometer hardly ever gave the same record twice in succession. The patient, however, was a very nervous youth with marked mitral regurgitation, and the application of the instrument invariably excited him. He studied the action of caffein on himself. Three grains of the citrate produced no change. With 5 grains he observed at first a rise (?) which amounted to only 5 mm. Within a quarter of an hour, the pressure, which was 120 mm. to start with, rose to 130 mm. and in half an hour to 135 mm. The headache from which he was suffering was definitely increased. Not until an hour and ten minutes after he had taken the drug did he find the pressure return to normal. On another occasion he took 10 grains. In ten minutes there was 15 mm. increase in the blood-pressure, and in half an hour 140 mm. was reached. Only in two hours afterward did he obtain the normal reading. Burnet experienced considerable inconvenience from copious diuresis. Strychnin he regards as a most valuable stimulant to the circulation in cases in which the latter threatens to fail, as in pneumonia. Its effects on arterial pressure are very definite. He has carefully observed these in several cases, and has come to the conclusion that when the blood-pressure has fallen below the normal, strychnin is the drug to

administer. Within a very short time after its hypodermic administration a rise of as much as 40 mm. has been obtained. When given by the mouth the rise is never so rapid or so great but still it can be recorded. Nor is it necessary to administer large doses in order to produce a definite rise in the arterial pressure. This may be readily obtained by giving 5 minims of the liquor strychninæ hydrochloridi (B. P.) by the mouth or by injecting 2 or 3 minims hypodermically.

Clinical Journal, London

August, 7, XL, No. 18, pp. 273-288

25 Abscess of Brain. C. A. Ballance.
26 Treatment of Pleural Effusion. O. Grunbaum.

August 14, XL, No. 19, pp. 289-304

27 Diagnosis of Phthisis and Its Treatment with Tuberculin. C. Riviere.
28 *Infantile Spastic Paralysis and Its Treatment. E. M. Little.

August 21, XL, No. 20, pp. 305-320

29 Some Cases of Enlarged Spleen. W. H. Willcox.
30 Electrocardiogram in Complete Heart-Block. C. C. Gibbes and J. F. H. Dally.

28. **Infantile Spastic Paralysis.**—Little is of the opinion that all cases of infantile spastic paralysis except the hopelessly idiotic are amenable to surgical treatment. This in the first place should consist of tenotomy or tenectomy and the application of splints, or plaster-of-Paris. Accompanying and following this the assiduous and patient training of the child is indispensable. Retaining apparatus can be worn at night, and in those patients able to walk, ambulatory instruments by day. The method of alcohol injection may be given a trial, but in very severe cases which do not improve under other treatment Foerster's operation is indicated. It should not be performed indiscriminately, but only after careful study of the conditions of the individual case. If paralysis of voluntary impulses is complete, operation is useless. Athetosis is a contra-indication because it connotes profound degeneration in the brain centers.

Lancet, London

August 31, II, No. 4644, pp. 569-674

31 Student's Number, Session 1912-1913.

British Medical Journal, London

August 31, II, No. 2696, pp. 465-532

32 *Functional and Histologic Effects of Intraneural and Intraganglionic Injections of Alcohol. O. May.
33 Gray Hair Associated with Nerve Lesions. G. L. Cheatle.
34 Frenkel Treatment of Tabetic Ataxia. J. G. Garson.
35 Morphology of a Strain of Trypanosoma Equiperdum. W. Yorke and B. Blacklock.
36 Roentgen-Ray Treatment of Uterine Fibroids. G. F. Haenisch.
37 Results of Treating Exophthalmic Goiter with Roentgen Rays. F. A. Stoney.
38 Treatment of Hypertrichosis with Roentgen Rays. A. E. Rayner.
39 Roentgen-Ray Diagnosis in Some Forms of Arthritis. R. Morton.
40 Cervical Ribs. G. Scott.
41 Peribronchial Phthisis. A. C. Jordan.
42 Ionic Medication. H. L. Jones.
43 Physics of Ionic Medication. S. Sloan.
44 *Control of Heart Beat by Means of Contractions of Muscles Electrically Stimulated. W. Hampson.

32. **Intraneural Injections of Alcohol.**—May ascertained experimentally that alcohol, injected into the trunk of a peripheral nerve, produces a more or less complete local necrosis of the nerve at the point of injection. The change is not an "ascending" one, the nerve above the point of injection remaining normal; the cells of origin of the fibers may show some degree of chromatolysis, but do not exhibit signs of permanent injury. The conditions produced by such injection are more favorable to regeneration than those resulting from simple section without suture. The anatomic continuity of the nerve trunk favors rapid regeneration, though this is to some extent retarded by the fibrosis which occurs to a greater or less extent in every case of alcohol injection. It is apparently impossible by a single injection of alcohol to produce complete necrosis of the Gasserian ganglion, its dense texture preventing complete infiltration. The alcohol tends to find its way under the sheath of the ganglion toward the proximal root, which is affected to a greater degree than the actual ganglionic cells.

44. **Control of Heart Beat.**—Involuntary exercise of muscles under the stimulus of the electric current, Hampson says, can be made to yield some special advantages of great value which are not obtainable by voluntary exercise.

Briefly, the treatment is a special modification in several directions of the use of the Bergonie apparatus for repeated simultaneous stimulation of the large muscles of the body. Electrodes of large surface are held in firm contact with the front and back of the thigh, with the calves, the two sides of the abdomen and the back. A faradic current of moderate tension is passed through all the electrodes simultaneously at short intervals, so that all the muscles treated make intermittent contractions which, in consequence of the nature of the current and the conducting surfaces, are moderate and painless. Not only is the stimulation general, being applied to as many of the large muscles as can conveniently be stimulated together, but a special arrangement is made for the timing of the stimuli, the makes and breaks being governed by a metronome, which can be set at any desired speed.

When it is wished to make the patient's heart beat more slowly the metronome is set so that the muscle stimulations occur at a slightly slower rate than the pulsations of the patient's heart, and the latter in a few minutes begin to synchronize with the former. When synchronization is well established the metronome speed is further lowered a few beats per minute, and before long the heart picks up the reduced rate. By persevering in this way the operator brings down the pulsation of an over-rapid heart to a rate that is at or near the normal.

The pulse is at the same time made stronger and more regular, the patient experiences a sense of well-being, rest and relief from distress, which lasts for several hours after the treatment is over, and, in particular, difficulty of breathing is diminished or removed.

After a course of treatment the heart acquires a better habit of its own when not under treatment, and a heart which was dilated not only acquires a pulse which is stronger and slower, but also undergoes appreciable contraction.

The *rationale* of the treatment is said to be briefly this: The heart is assisted in its work of making the blood circulate by a temporary conversion of the large muscles of the body into subsidiary hearts. Its work is thereby better done, while it is itself doing less work. The circulation of the whole body is improved, while the heart is in a partially resting state.

Annales de Gynécologie et d'Obstétrique, Paris

August, XXXIX, No. 8, pp. 449-512

45 *Retention of Menstrual Blood in Case of Malformation of Uterus and Vagina. (De l'hématocolpos latéral dans les cas de malformation utéro-vaginale.) Vautrin.
46 Retroplacental Hemorrhage with Infiltration of Wall of the Uterus. (2 nouvelles observations d'apoplexie utéro-placentaire.) Couvelaire.
47 Pathogenesis and Prophylaxis of Lesions in the Placenta with Albuminuria and Eclampsia. V. Wallich.
48 *Therapeutic Acidity of the Vaginal Mucus. R. Labusquière.

45. **Malformations in Uterus and Vagina Mechanically Interfering with Menstruation.**—Vautrin remarks that this subject has been singularly neglected and especially the accumulation of the menstrual discharge in a double uterovaginal canal, of which he has encountered two cases. Gross found only four cases without hematometra in ninety cases. If there is no menstruation or if the second vagina is not open at either end the malformation may be only an accidental discovery, as in a case in which he removed the uterus for pains in the pelvis ascribed to old sclerosis of the internal genitals. All disturbances ceased after the double hysterectomy operation. The open vagina was drained and the second one was sutured above, thus leaving it completely closed. The long shape and fixity of the tumor caused by accumulation of blood in a supernumerary vagina are characteristic, as also the first development at puberty or later. The malformations are generally multiple and menstruation abnormal in these cases. In treatment it might be advisable to excise the wall between the two vaginas or remove all trouble by panhysterectomy or by excision alone of the second uterus and vagina.

48. **Sugar Sterilization of Vagina.**—Labusquière summarizes Kuhn's recent work on sterilization of the uterus and vagina with solutions of sugar. The acidity thus generated seems to reduce imported germs to the rôle of harmless saprophytes. An argument in favor of this assumed protecting action from

the acids generated by the fermentation of a sugar solution is that diabetic women seem to escape puerperal fever more than others.

Archives Générales de Chirurgie, Paris

July, VI, No. 7, pp. 749-876

49 *Aneurysm of the Splenic Artery. E. Villard and J. Murard.
50 Experimental Research on Ulceration of Large Arteries in Contact with Drains. R. J. Weissenbach and H. Bertier.
51 *Operative Treatment of Genital Tuberculosis in Men. Lapeyre.

49. Aneurysm of Splenic Artery.—Villard and Murard report a case with necropsy but they have been able to find only one similar case on record. Both patients were healthy; one was a woman of 25 and the other a man of 33; both had suffered from rare occasional acute attacks of intense pain in the abdomen, without change in the pulse or temperature, and during the intervals they felt entirely well. These symptoms had been observed for two years in the man's case and for six years in the other before an extremely long attack of the pain brought the patients to the surgeon. The woman was cured by splenectomy, but in the man's case the viscera were inoperably welded together.

57. Genital Tuberculosis in the Male.—Lapeyre reviews what has been written on this subject, epitomizing his conclusions in the statement that genital tuberculosis in male adults, in the frequent primary form, is a mild local affection, essentially amenable to surgical measures. The lesions should be removed far into sound tissue but the testicle should be left undisturbed, as in fully 50 per cent. of the cases it is intact. Slight involvement of the prostate or seminal vesicles generally heals spontaneously after removal of the focus below. Vasoepididymectomy is the preferable technic, and the sexual functions are not impaired even by a bilateral operation. The sound vas should be resected to protect the second testicle. Removal of the seminal vesicles may be necessary to supplement the vasoepididymectomy, and access by the inguinal or perineal routes should be determined by individual conditions. Bilateral castration should never be done except from urgent necessity.

Archives des Maladies de l'App. Digestif, Paris

June, VI, No. 6, pp. 302-360

52 Catheterizing Pylorus and Duodenum. (La dilatation du pylore sans opération.) M. Einhorn.
53 Diagnosis of Gastric Cancer. (Un renseignement de plus pour le diagnostic du cancer gastrique.) A. Medina.
54 Hemorrhagic Ulcerative Colitis. Bret and Blanc-Perducet.
55 Volatile Acids in Stools. (L'acidité volatile des matières fécales.) H. Labbé and E. Larue.
56 Diagnosis of Hour-Glass Stomach. (A propos du diagnostic radiologique de l'estomac bilobulaire.) Cerné and Delaforge.

Bulletins de la Société de Pédiatrie, Paris

June, XIV, No. 6, pp. 249-323

57 Disadvantages of Condensed Milk in Infant Feeding. (L'emploi des laits condensés chez le nourrisson.) E. Ausset.
58 *Osteomalacia in Boy of 9. (Déformations ostéomalaciques du squelette chez un garcon de 9 ans.) L. Tixier and C. Roederer.
59 Congenital Stenosis of the Pylorus from Muscular Hypertrophy; Death the Sixth Week. (Rétrécissement congénital du pylore chez un nourrisson.) A. B. Marfan.
60 Experimental Heat Stroke. (Influence de la chaleur chez les jeunes chiens.) Schreiber and Dorlencourt.
61 Adrenal Insufficiency in Erysipelas in Infants. (De quelques particularités de l'érysipèle du nouveau-né. Forme clinique avec signes d'insuffisance surrénale.) Lesné and Francon.
62 Auscultation of Tracheobronchial Enlarged Glands. (La recherche de la transsonance sterno-vertébrale chez les enfants. Sa valeur pour le diagnostic de l'adénopathie trachéo-bronchique.) D'Oelsnitz.

58. Osteomalacia in Children.—The little patient in the case reported was a boy of 9, but the first signs of trouble had been noted at the age of 4. The child had previously been healthy. The blood-pressure was low and there was marked weakness, both suggesting disturbances in the ductless glands as factors in the osteomalacia. This assumption was sustained by a tendency to pigmentation and discovery of Sergent's adrenal white line. The child is taking now a tentative course of epinephrin.

Lyon Chirurgical, Lyons

August, VIII, No. 2, pp. 121-244

63 *Early Treatment of Talipes. (Résultats éloignés et valeur de la méthode de Finck dans le traitement précoce des pieds bots congénitaux.) G. Nové-Josserand and A. Rendu.
64 Vaginal Operation for Fistula After Abdominal Hysterectomy. (Le traitement par le colpocleisis élevé des fistules urinaires vaginales consécutives à l'hystérectomie abdominale avec évidement pelvien pour cancer utérin.) H. Violet and J. Murard.
65 Ossification in Mammals. G. Dubreuil.

63. Early Treatment of Club-Foot.—Nové-Josserand and Rendu have applied Finck's method in the treatment of talipes in thirty cases and extol it as extremely effectual. The results were perfect in 50 per cent.; in 37 per cent. simple tenotomy was required besides, and in 12 per cent. internal or posterior arthrotomy proved necessary, but the second operation was much facilitated by the preceding treatment. Finck commences the correction of the talipes the very day of birth, keeping up the massage in a progressive and a continuous manner and maintaining the correction obtained by a flannel bandage wound over a hard sole with thick felt lining. The bandage is removed each time for the massage. By the age of two months the tissues are too firm to commence effectual massage. The best results were obtained by first correcting the adduction of the front part of the foot, correcting also to a slight extent the supination, but not acting on the equinus position. In the second sitting, next day, the supination and equinus position are combated and so on until hypercorrection is realized so that the foot retains the normal position after the bandage has been removed. This result is generally obtained with twelve sittings or less. Twelve illustrations show the various maneuvers and dressing, and the appliance worn afterward for elastic traction. The whole procedure is complete by the end of six months.

Presse Médicale, Paris

August 3, XX, No. 63, pp. 649-656

66 Auscultation of the Apex in Adults. (Valeur séméiologique chez l'adulte de la diminution du murmure vésiculaire limitée au sommet.) F. Bezançon.
67 Connection Between Tuberculosis and Chronic Mediastinitis. (La médiastinite chronique considérée dans ses rapports avec la tuberculose.) E. Sergent.

August 7, No. 64, pp. 657-664

68 Traumatic Separation of the Epiphyses. (Les traumatismes osseux chez l'enfant.) Kirmisson.
69 *Local Subarachnoid Anesthesia in Treatment of Gastric Crises in Tabes. (Thérapeutique intra-rachidienne des crises gastriques du tabes. Ponction lombaire et injections sous-arachnoidiennes.) H. Roger and Baumel.

August 10, No. 65, pp. 665-676

70 Present Status of Tuberculin Treatment of Pulmonary Tuberculosis. L. Rénon.
71 Screws in Treatment of Fracture of the Olecranon. (Le vissage simple appliqué aux fractures fermées de l'olécrane.) P. Algiave.
72 To Remove Stain of Iodin from Hands. (De l'emploi de corps permettant de décolorer les téguments lors de la désinfection des mains par la teinture d'iode.) H. and E. Chabanier.

August 14, No. 66, pp. 677-684

73 *Butterfly Net as Mosquito Catcher. (Sur la destruction des moustiques à l'aide du filet.) J. Legendre.
74 *Treatment of Anthrax. L. Boidin, Vignaud and L. Fortineau.

August 17, No. 67, pp. 685-692

75 *Local Anesthesia and Surgeons Who Operate on Themselves. (L'anesthésie localisée et les chirurgiens qui s'opèrent eux-mêmes.) P. Reclus.

August 21, No. 68, pp. 693-700

76 Cultivation of Tissues Outside of the Organism. (La vie manifestée des tissus "in vitro.") A. Carrel.
77 The "Physiologic" Jugular Venous Pulse. C. Lian.

69. Spinal Anesthesia in Treatment of Gastric Crises.—Roger and Baumel explain the benefit from subarachnoid injection of a drug as the result of the "leukocyte shower" which follows the chemical irritation. Thus is induced a therapeutic serous meningitis, and this favors the absorption of the products of the chronic process in the spinal roots which seems to be the main factor in the attacks of pain. This assumption throws light on the permanent benefit derived from injection by lumbar puncture of an anesthetic or other drug, especially subarachnoid injection of cocain or magnesium sulphate. In a case of recurring gastric crises in a man of 32, the intervals had become shorter and shorter in the course of two years but there were scarcely any other signs of tabes. Withdrawal of 10, 20 or 30 c.c. of cerebrospinal fluid had no influence on the crises, but they did not recur for months after injection of a small amount of an anesthetic. Two repetitions later of the injection failed to influence the crises, which even increased in intensity. Then 4.5 c.c. of a 25 per cent. solution of magnesium sulphate was injected by lumbar puncture and this arrested the gastric crises and there were no further attacks for four months, when they recurred in such intensity that the patient clamored for repetition of the injection. The benefit was as pronounced as before, and the patient was free from all disturbances at date of writing, a few days later. There were no appreciable by-effects after injection of the mag-

nesium sulphate except intense general hyperesthesia for a few hours. The cerebrospinal fluid showed signs of a pronounced polynuclear reaction two days after the injection. Each of the drugs used in spinal injection in tabes has some successful cases to its credit, as well as failures. Further experience in this line is needed.

73. **Butterfly Net as Mosquito Catcher.**—Legendre called attention two years ago to the advantages of a conical butterfly net as an easy means to catch mosquitoes. His experience in the tropics with it since has shown that it is even more effectual for the purpose than he had dreamed. The opening of his net pocket is 19 by 13 inches, the deep pocket tapering to a point, and here the mosquitoes congregate. Estimating 900 mosquitoes to the gram, with a few of these nets from 50,000 to 80,000 mosquitoes have sometimes been taken in one building. In a sick room and in caring for children, the attendant can thus easily, silently and without haste, capture the casual invaders, day or night, without disturbing anyone.

74. **Treatment of Anthrax.**—The experiences on record to date are reviewed in regard to serotherapy, salvarsan and preparations of the *Bacillus pyocyaneus*. The results to date are not conclusive, but several cases of recovery under serotherapy, even after invasion of the blood, have been reported. In Boidin's one case it failed. The antagonism between the anthrax bacillus and the pyocyaneus has been utilized in treatment, and Vigneud reports three recoveries under it. He has had sixty cases of anthrax in his practice and never knew a patient to recover who had the symptoms presented by one of the patients who recovered under the pyocyanein. Fortineau reports extensive experimental research in this line and the cure of four cows given this treatment. He has applied it also in eighteen clinical cases with recovery of all the patients. Boidin urges bacteriologic examination of the blood in all cases of anthrax, as this alone affords a basis for comparison of the effects of different methods of treatment.

75. **Local Anesthesia and Operating on One's Self.**—Reclus was one of the pioneers in the application of local anesthesia, and for many years has operated extensively with it, a total of 12,000 minor and major operations in twenty-six years. He says that whenever it is possible, it should always be given the preference as it avoids not only the immediate dangers from the general anesthesia but the insidious damage to the kidneys and liver and the inhibition of phagocytosis the clinical importance of which we are only beginning to appreciate. The objection that it would shock patients to watch an operation on their own tissues has not proved tenable; when permitted, they follow the surgeon's work with great interest. The advantages of the method are peculiarly evident when a surgeon by this means is able to perform an operation on himself with as much skill and sangfroid as when another is the victim. Reclus reports four cases of this kind. The first was the excision of a tuberculous process in the right forefinger, a cadaver infection. The young surgeon's consultant advised amputation of the finger, but he did not wish to lose it and consequently excised the lesion himself, holding the knife firm in the left hand and scooping out the lesion by manipulating the finger on the knife and curet. The lesion healed with only a minimal scar left now, twenty years later. In the second case a surgeon made an extensive resection of an ingrowing nail under local anesthesia, with equally good results. In the third case a Turkish army surgeon, studying in France, was operated on under local anesthesia for bilateral inguinal hernia. He was so impressed with the local anesthesia that soon after he proceeded to resect his own scrotum to cure varicocele, and with entire success. The fourth case is more recent and has been written up lately in the daily papers. The surgeon in question is Dr. J. Regnauld, formerly professor of anatomy at Toulon. He thus operated on himself for a left inguinal hernia without the slightest disturbance or pain except from the first prick of the preliminary injection in the thigh of 0.005 gm. of morphin. He then injected 3 c.c. of a 0.5 per cent. solution of cocain into the various layers of soft tissue and 2 c.c. into the fibers on each side of the ring. During the course of the operation he injected another 2 c.c. around the spermatic cord and neck of the hernial sac. About 15 drops of epinephrin had been added to 40 c.c. of the solution. Before and during the operation he drank a little coffee. The operation was done leisurely, in about an hour and a quarter, and the superior advantages of the local over spinal anesthesia for this "autotomy" were abundantly demonstrated. Two auto-operations under spinal anesthesia are on record, but Reclus knows of only the above four under direct local anesthesia.

Revue de Chirurgie, Paris

August, XXXII, No. 8, pp. 117-348

78 *Ulceration of Iliac Artery. (Ulcération spontanée des branches de l'iliaque externe dans les abcès appendiculaires.) M. Patel and J. Murard.
79 Dyspepsia of Biliary Origin. (Des troubles dyspeptiques d'origine biliaire.) G. Cotte and E. Bressot.
80 Stenosis of the Esophagus. (Le traitement actuel des sténoses cicatricielles graves de l'oesophage. Méthodes endoscopiques et interventions chirurgicales combinées.) L. Sargnon and H. Alamartine.
81 Surgical Anatomy of Horseshoe Kidney. (Chirurgie du rein en fer à cheval.) V. Carlier and M. Gerard. Commenced in No. 7.

78. **Ulceration of the Iliac Artery.**—Patel and Murard refer to involvement of the external iliac artery in an appendicitic abscess. They recently encountered a case of the kind and report a second one from Bérard's service; both patients succumbed to the hemorrhage from the ulcerated external iliac. The appendix region had been drained after appendicectomy in both cases.

Semaine Médicale, Paris

August 14, XXXII, No. 33, pp. 385-396

82 Hysterectomy for Uncontrollable Post-Partum Hemorrhage. R. de Bovis.

August 21, No. 34, pp. 397-408

83 *Adsorption and Its Utilization in Therapeutics. L. Cheinisse.

August 28, No. 35, pp. 409-420

84 *Treatment of Diarrhea by Sedative Medication. (Nouveau traitement médicamenteux des diarrhées.) E. Fuld.

83. **Adsorption and Its Utilization in Therapeutics.**—Cheinisse defines adsorption as the fixation of a substance primarily at liberty in a fluid medium, for example, on the surface of another substance—a molecular adhesion and not a chemical combination. Adsorption may be reversable or not, but it is the explanation for the action of charcoal and bolus alba as an antidote to poisons and in treatment of auto-intoxication, cholera, typhoid, chronic enteritis, etc., and bacillus-carriers. The favorable action of bismuth in gastric ulcer is probably due to its adsorbing property as well as the mechanical protection it affords. Cheinisse thinks that the principle of adsorption has not been utilized to the full in internal medicine and prophylaxis to date.

84. **Treatment of Diarrhea.**—Fuld became convinced that diarrhea occurring soon after meals is merely an exaggeration of the physiologic process owing to abnormal irritability of the stomach nerves. Treatment of the diarrhea based on this assumption has given unexpectedly good results. He ordered the patient to take, ten minutes before each meal, 10 drops of a solution containing 3 per cent. cocain and an equal amount of codein in peppermint water. For children he prescribes a 1 per cent. solution, as many drops as the child has years. No by-effects were observed, but the diarrhea, recent or chronic, rebellious to all other measures and dieting, stopped after ingestion of the first dose. He usually kept up the treatment for a few days up to a week. No tendency to constipation followed if the patients had not been subject to it previously. He regards this treatment as ideal from all points of view, and cites two cases from his experience with fifty. It is possible that cocain suppositories might answer the same purpose. The only failure in his series was in a diabetic with hyperchlorhydria, and administration of the lacking hydrochloric acid finally cured the diarrhea. The sedative medication was promptly successful in his two cases of diarrhea in tuberculosis. In another case the diarrhea was really incontinence following an operation on the rectum, but the sedative medication proved equally effectual, the gastric reflex acting apparently on the sphincter trouble.

Archiv für Verdauungs-Krankheiten, Berlin

XVIII, No. 4, pp. 441-570

85 *Mechanical Support with Gastroptosis. (Die Wirkungen einer Binde bei der Gastroptose. Eine klinisch-röntgenologische Studie.) A. Borgbjärg and J. F. Fischer.

86 Catheterizing the Pylorus. (Dehnung des Pylorus ohne Operation.) M. Einhorn.
87 Hormonal. (Weitere Erfahrungen mit dem Peristaltikhormon—Zülzer.) R. Glitsch.
88 *Influence of Mastication and Emotions on Gastric Acidity. (Einfluss des Kauaktes und Wirkung psychischer Faktoren auf die Beschaffenheit des Mageninhalts nach Probefrühstuck.) G. Skray.
89 Neuenahr Waters with Peptic Gastric Ulcer. (Neuenahrer "Grosser Sprudel" bei Ulcus pepticum und irritativen Zuständen des Magens.) E. Rosenberg.
90 *Primary Gastric Myxosarcoma. E. Fricker.
91 *Gastritis with Gastric Ulcer. (Zur Frage der Gastritis bei Ulcus ventriculi.) B. Chessin.
92 *Importance of Starch-Iodin Stomach Content Test for Retention and Atony. (Bedeutung der Amylaceenretention im nüchtern ausgeheberten Mageninhalt.) T. Hausmann.
93 Early Diagnosis of Cancer. (Frühdiagnose der Krebse des Verdauungskanales.) J. Wolff and G. Kelling.

85. Support for Sagging Stomach.—Borgbjärg and Fischer extol the advantages of combining a supporting band with an elastic pad to relieve the disturbances from gastroptosis. Their skiagrams show that this actually lifts the stomach and sustains the abdominal walls. (Their conclusions have already been summarized in these columns, May 25, 1912, p. 1652.) They use Vermehren's corset with an Enriquez air pad.

88. Influence of Mastication and Psychic Factors on Stomach Secretion.—Skray found in his investigation of 118 patients given a test breakfast that mastication and emotional factors had a decided influence on the acidity of the stomach content. With defective mastication the total acidity of the stomach content was higher, while emotional factors reduced the production of acid, but this influence was far less marked than that of mastication. When the test breakfast was not well chewed, the chymification was defective. This was evident even in cases of pronounced hyperacidity, and it imposes the necessity for thorough chewing of the food in a test meal.

90. Gastric Myxosarcoma.—Fricker's case is the fourth one on record, he believes; it was distinguished by the fact that the stomach content seemed to be normal, although a tumor could be palpated and there was some retention. There had been symptoms of mild gastric disturbance for nearly two years when they increased in intensity and the tumor was excised.

91. Gastritis With Gastric Ulcer.—Chessin concludes from the nine cases cited that gastritis is the rule with gastric ulcer. The ulceration is part of a general process involving the gastric mucosa more or less extensively.

92. Importance of Retention of Starch as Sign of Stenosis of the Pylorus.—Hausmann says that the findings of the currant test indicate a motor disturbance in the stomach, but this may be due to either mechanical causes or to atony of the stomach walls. Of greater differential value is the macroscopic retention of particles of starch; this occurs only with mechanical retention. The test for it is extremely simple; twelve hours after a test supper of rice or barley porridge the stomach contents are aspirated, the patient reclining. The stomach content is set aside in a glass to settle and then all is poured out except about 5 c.c. A few drops of Lugol's solution are well mixed with the sediment and water added until the turbid fluid becomes transparent. Particles of starch, stained dark blue, can be seen floating in the water or settling to the bottom. The presence of visible starch particles indicates mechanical retention, while microscopic findings alone indicate retention from atony of the stomach. With general asthenia there may be microscopic retention of starch at times and not at others when the general condition is improved. His extensive experience demonstrates that macroscopic starch particles may be accepted as a certain sign of mechanical obstruction. Among some instructive cases cited is that of a man of 52 with anacidity and 20 c.c. content with macroscopic minimal retention of starch in the fasting stomach; no blood, no tumor, no lactic acid were evident, but on the above findings alone he correctly diagnosed cancer of the pylorus. In ten years of experience Hausmann has never encountered a case of macroscopic retention of starch which proved to be due to atony alone. His experience has demonstrated further that starch particles may be retained in case of hypersecretion when fat and meat particles are passed along. This frequently corroborated fact confirms anew the advisability of a fat-albumin diet in cases of stenosis of the pylorus, as Strauss has emphasized. The starch test may thus point the way to effectual dietetic treatment, as he shows by an instructive example, no signs of retention being found after restriction to a fat and albumin diet. The currant test is liable to be misleading as the currants are not always pumped out with the rest of the stomach content.

Berliner klinische Wochenschrift

August 12, XLIX, No. 33, pp. 1549-1596

94 *Bacillus-Carriers. (Bacillenträger.) G. Sobernheim.
95 Cultivation of the Spirochæta Pallida. H. Noguchi and Tomaszewski.
96 Injury of Tissues from Radiothorium and Products of Radium Emanation. E. P. Tegle.
97 *Metastasis of Thyroid Tumor in Bone. (Schilddrüsenmetastasen im Knochen.) F. Regensburger.
98 Dislocation of the Fingers in Syringomyelia. (Distensionsluxationen bei Syringomyelie.) Joachimsthal.
99 Phonoscope Percussion. (Die "phonoskopische Perkussion," eine neue Untersuchungsmethode.) J. Tornai.
100 *Asthma in Children. (Asthma bei Kindern und dessen Behandlung.) H. E. Knopf.
101 Roentgenoscopy of Duodenal Ulcer. (Zur Technik der Röntgenuntersuchung des Duodenalgeschwüres.) S. Kreuzfuchs.
102 Anaphylaxis. (Ueber Kriterien der Anaphylaxie.) J. Auer.
103 Medicolegal Questions. (Der ärztliche Eingriff im Spiegel des Rechts.) H. Lieske.

94. Bacillus-Carriers.—Sobernheim comments on the fact now well established that nearly every infection has a history of cases in which no appreciable symptoms were induced by it, while the prophylaxis of infectious diseases stands and falls with the control of the bacillus-carriers. He gives a table showing that of 1,832 persons examined for diphtheria bacilli (Berlin, 1910-11) they were found in 244 healthy persons, that is, in 13.3 per cent. Dysentery bacilli were found in thirteen healthy persons among 500 examined, and in thirty-three presenting symptoms of dysentery. Paratyphoid bacillus-carriers are so numerous in certain parts of Germany that this germ must be regarded as ubiquitous there, while it is comparatively rare in Berlin, being found only in the sick and the contacts.

97. Metastasis of Thyroid in Bone.—Regensburger's patient was a woman of 55 with a slight enlargement of the thyroid and a tumor in the upper arm which proved to be proliferation of thyroid tissue. The tumor had been developing for two years. In fifty-eight cases on record of thyroid metastasis the interval before death ranged from three months to seventeen years, the metastasis—not the thyroid—being responsible for the fatal outcome. In the present case the arm was exarticulated with apparent success. He reviews the literature on the subject; there seems to be a special affinity between the thyroid and bone tissues, metastasis occurring in the bones with thyroid cancer more frequently than with cancer elsewhere. Winiwarter was unable to find a case of bone metastasis in 903 cases of gastric cancer, but the lungs suffer more frequently than the bones from metastasis of a thyroid cancer.

100. Asthma in Children.—Knopf has encountered asthma in five cases in children and succeeded in curing it in all without exception. The treatment includes besides the usual physical, dietetic and medicinal means, psychic training, change of environment and systematic breathing exercises.

Correspondenz-Blatt für Schweizer Aerzte, Basel

July 20, XLII, No. 21, pp. 777-808

104 Propaganda for Breast Nursing. (Stillen und Stillunfähigkeit.) H. Koller.
105 *Why Epidemics of Cholera are Liable to Die Out After a Heavy Rain. (Warum eine Choleraepidemie nach einem heftigen Gewitter über ein ausgestrecktes Gebiet für längere Zeit verschwindet.) C. O. Geipke.

August 1, No. 22, pp. 809-840

106 *Manifestations of Cerebrospinal Arteriosclerosis and Their Treatment. (Ueber einige Erscheinungsformen der cerebrospinalen Arteriosklerose.) R. Bing.

August 10, No. 23, pp. 841-888

107 *Treatment of Parasyphilitic Nervous Disease. (Spezifische Behandlung der parasyphilitischen Nervenkrankheiten.) J. Jadassohn.
108 Treatment of Prolapse of the Uterus in Elderly Women. (Prolapsoperationen bei älteren Frauen.) E. Wormser.
109 Whooping Cough. (Zur Aetiologie und Pathologie des Keuchhustens.) E. Döbeli.

105. **Rainstorms and Cholera.**—Gelpke recorded a number of interesting facts in regard to cholera during his years of practice in the East Indies (Batavia). His attention was attracted particularly to the way in which a cloudburst or extremely heavy rainstorm was so often followed by the arrest of a prevailing epidemic. This and certain other observations have convinced him that fish play an important part in the transmission and spread of cholera. He relates a case of cholera which had developed in a family living where there were no neighbors for miles in all directions and no strangers had passed that way for weeks. Transmission from human beings was out of the question in this case. He remarks that vultures assemble where there is carrion, and the fish assemble when the carrion is in water, and they may come from long distances. The progress of cholera has been along the rivers, generally from the mouth upward, although cholera germs cannot spontaneously make their way against the stream. But they can be carried by fish going up to spawn. A heavy rain raising the rivers washes away the fishes' eggs and the silt deposited by the turbid waters acts as a filter that prevents contamination of the ground water beneath the streams. India is the home of cholera, and to this contributes the custom of the natives in regard to systematically defecating into running waters.

106. **Cerebrospinal Arteriosclerosis.**—Bing says that the early symptoms of this condition closely resemble those of neurasthenia and sometimes can be differentiated only by the lack of the causes which produce neurasthenia. He is convinced that neurasthenia never develops without certain etiologic factors such as congenital degeneracy or, in the acquired form, a combination of nervous strain and the chronic influence of disagreeable emotions. When the symptoms of neurasthenia develop for the first time at the arteriosclerosis age, the vascular apparatus should be carefully examined; the true and false forms may be associated. The vasomotor cardiac disturbances of true neurasthenia are liable to afford a predisposition for arteriosclerosis. When the intracranial arteriosclerosis is more advanced, there may be paroxysmal pains simulating neuralgia. The absence of tender points along the nerves, and the boring, lancinating character of the pains suggest that they are due to cramps in the vessels rather than to true neuralgia. Motor disturbances of the type of intermittent claudication are more common; Bing has recently encountered two cases of this "intermittent claudication of the spinal cord." It is distinguished from the peripheral form by the absence of vasomotor and pulse disturbances in the legs, and by the transient exaggeration of the knee-jerk and Achilles reflex. Spinal intermittent claudication from syphilitic endarteritis is more common than from arteriosclerosis of the spinal cord. Fleeting paresis of one arm or leg or both and transient motor aphasia may be induced by cerebral arteriosclerosis. These fleeting phenomena occur in the borderland between functional and organic disturbances. Minute multiple defects in the brain substance from the arteriosclerotic process—*lacunes de désintegration cérébrale*—are responsible for the mild and transient hemiplegias of the elderly, gradually retrogressing and never inducing contracture, hemianopsia or conjugated deviation. Patients who have once had this lacunar hemiplegia are liable later to cerebral glossopharyngolabial disturbances, a pseudobulbar paralysis. The disturbances, however, are generally on the other side, but they prove more durable. The paralyzed muscles in this pseudobulbar paralysis do not give the reactions of degeneration. Contractures finally develop in the lips and tongue and the lower part of the face becomes rigid. Treatment must be mainly prophylactic and psychic, reassuring the patients and regulating the diet. Obstinate insomnia and headache often yield to an exclusive milk diet for a time; milk should be taken freely in all its forms, and alkaline mineral waters with a bland egg-vegetable diet. Potassium iodid should be given a trial in all cases of the nervous manifestations of arteriosclerosis. It seems to dilate the vessels and reduce the viscosity of the blood and possibly to promote phagocytosis; it is questionable whether it has an action on the sclerotic process in the vessels but a prophylactic action in this line is plausible. The iodid has to be kept up for a long time. Bing advises not to go above 0.5 to 1 gm. a day, and suspend for ten days after each twenty days. Potassium iodid and strychnin is his favorite combination. When the patient is wakeful at night and sleeps during the day, this is best combated by letting him sleep at will during the day and giving a little narcotic at night to ensure sleep. Then as he sleeps less during the day, the evening dose can be increased, and thus normal sleeping habits will return. Daily hot brine and mustard footbaths are useful with a tendency to congestion in the head, dizziness and headache, as also brief tepid full baths and douches followed by rubbing. Carbonated baths are not always well borne. The patients do best at a quiet health resort, at about 2,000 feet, sheltered from the wind and with an even climate. General massage is often useful.

107. **Treatment of Tabes and Paralysis.**—Jadassohn discusses the conflicting views in regard to the efficacy of specific treatment of parasyphilitic nervous affections. He agrees most decidedly with those who regard thorough specific treatment as indispensable, if only for the reason that true syphilitic manifestations may be associated with the parasyphilitic, and these can certainly be eliminated from the picture. On account of the unreliability of each alone, he advises a combination of mercury, iodid and salvarsan, testing the tolerance with small doses at first, and then increasing to an energetic dosage, keeping up the specific treatment for a long time and repeating it occasionally during the following years, supplemented by all other therapeutic, tonic and hygienic agencies. He remarks in conclusion that the dangers with salvarsan treatment do not seem to be any greater with tabes and paralysis than with ordinary syphilis, and no greater than those of mercury. He has witnessed the subsidence for many months of the lancinating pains and crises in tabetics given thorough combined specific treatment since the introduction of salvarsan, and he lists sixty-two physicians who have reported similar excellent results, while thirteen state that no benefit was observed. The majority of authors agree that in progressive paralysis specific treatment has no favorable prospects and a number have reported damage from salvarsan.

Deutsche medizinische Wochenschrift

August 8, XXXVIII, No. 32, pp. 1581-1628

110 Objective Psychology. (Was ist Psychoreflexologie?) W. v. Bechterew.
111 Chondrectomy for Freund's Emphysema. H. Braun.
112 *Epidemiology of Typhoid. (Ueber Typhusverbreitung.) G. Brückner.
113 Clinical Importance of Much's Granula. N. Körber.
114 *Conditions Which Permit the Breathing of Compressed Oxygen and Changes in Lungs in Oxygen Poisoning. A. Bornstein and Stroink.
115 Case of Addison's Disease. T. Klein.
116 Ulnar Paralysis and Cervical Ribs. (Ulnarislähmung und angeborene Halsrippe.) E. Bibergeil and D. Blank.
117 Prophylaxis of Puerperal Fever. (Zur Bekämpfung des Puerperalfiebers.) L. Nieszytka.
118 Electric Vibration Massage. Herschel.

112. **Typhoid.**—Brückner reviews the data collected by the commission appointed by the government to combat typhoid. The facts recorded render it more certain than ever that the sick or healthy bacillus-carriers are the exclusive source of typhoid. The traffic in articles of food seems to be the main factor in distribution of the disease.

114. **Oxygen Poisoning.**—Bornstein has been experimenting with animals to determine the conditions permitting life in an atmosphere of oxygen. He knows of only one case of actual oxygen poisoning in man, and this was on himself while he was studying the subject. The oxygen seemed to affect the lungs exclusively in his experiments; the alveoli were filled with effusion. The experiences reported justify the conclusion that man can stand oxygen at a pressure of two atmospheres for twenty or thirty minutes without harm.

Medizinische Klinik, Berlin

August 4, VIII, No. 31, pp. 1259-1300

119 Tuberculosis of the Nose. (Diagnose und Behandlung der Nasentuberkulose.) O. Körner.
120 Excessively High Blood-Pressure of Ovarian Origin. (Zur Deutung seltener Hypertonien.) G. Schickele.
121 *Perforation of Esophagus by Foreign Body; Four Cases. A. T. Jurasz.

122 Action of Radium on Surgical Processes. (Anwendung des Radiums in der Chirurgie.) A. Sticker.
123 *Hysteria and General Practice. (Hysterie und Praxis.) A. Steyerthal.
124 Ultraviolet Rays in Treatment of Leg Ulcer. (Behandlung der Ulcera cruris mit der Quarzlampe.) E. Braendle.
125 Epidemic of Purpura. A. Ernst.
126 Microscopic Research on Action of Salvarsan on the Circulation of the Blood. (Mikroskopische Beobachtungen am lebenden Tier über die Wirkung des Salvarsans und des Neosalvarsans auf die Blutströmung.) G. Kicker and W. Knape.

August 11, No. 32, pp. 1301-1338

127 Failing Mental Faculties in the Aged. (Altersschwachsinn.) E. Mattauschek.
128 Anemia After Tropical Diseases. V. Schilling.
129 Skin Disease and Balneotherapy. (Hautkrankheiten und Bäder.) E. Vollmer.
130 Outcome of Operative Treatment of Chronic Inflammation in the Uterine Adnexa. F. Ebeler.
131 The Blood-Pressure During Thermal Baths. (Blutdruckmessungen bei Thermalbädern und Thermal-Duschemassage.) E. Rothschuh.
132 Fatal Methyl Alcohol Poisoning. (Todesfall nach dem Genuss von Methylalkohol enthaltendem Schnaps.) R. Schlichting.
133 Wassermann Reaction no Criterion for Local Diagnosis. F. Bruck.
134 Improved Zinc Chlorid Technic for Staining Tissues. (Verbesserung der Färbungen durch Fixierung des Gewebes mit Chlorzink.) T. Reimann and P. G. Unna.

121. Perforation of Esophagus by Foreign Body.—The damage was done probably as the physician pushed down into the stomach a small piece of bone which had lodged in the upper part of the esophagus of a healthy woman of 53. She succumbed to the complications of the consecutive inflammatory process. In three other cases in the same clinic (Payr) two of the patients were saved by opening the thorax and esophagus. The other succumbed to sepsis. Only nine are known to have survived in the fifteen cases Jurasz has found on record of operative treatment of the phlegmon following the perforation.

123. Hysteria.—Steyerthal insists that the term hysteria should be discarded. Its use in general practice leads only to misunderstandings. Congenital, mental or psychic inferiority on the one hand and acquired weakness of the nerves, on the other hand, make up the kaleidoscopic picture which we call hysteria. The term should be dropped not only for humane reasons but for the prestige of the profession and medical ethics.

Münchener medizinische Wochenschrift

August 6, LIX, No. 32, pp. 1745-1792

135 Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis and Bronchiectasia. (Ueber den künstlichen Pneumothorax bei Lungentuberkulose und Bronchiektasien.) F. Volhard.
136 Serologic Diagnosis of Tuberculosis with Combined Tuberculin and Tissue Extract. (Die Komplementbindungsreaktion bei Tuberkulose.) C. Hammer.
137 Elective Culture Media for Cholera Germs. (Choleraelektivnährboden.) A. Dieudonné and K. Baerthlein.
138 Hecht's Modification of the Wassermann Reaction. G. Brendel and H. Müller.
139 Inhibiting Influence of Cholesterin on Paroxysmal Hemoglobinuria. (Beeinflussung des hämoglobinurischen Anfalles durch Cholesterin.) J. Pringsheim.
140 Prophylaxis of Tuberculosis in Children. (Bekämpfung der Tuberkulose im Kindesalter.) v. Leube. Commenced in No. 31.
141 Epilepsy (Die Epilepsie als klinischer Krankheitsbegriff.) L. W. Weber. Commenced in No. 31.
142 Anaphylactic Reaction of the Lung. E. Friedberger and H. Ströbel.
143 Forty Years of Official Organization of the Profession in Bavaria. (Vierzig Jahre staatliche ärztliche Organisation.) W. Mayer.

August 13, No. 33, pp. 1793-1840

144 Expectant Treatment of Eclampsia. (Die abwartende Eklampsiebehandlung.) F. Lichtenstein.
145 Danger of Overestimating Importance of Wassermann Reaction in General Practice. (Was nützt die Wassermannsche Blutprobe in diagnostisch zweifelhaften Fällen dem praktischen Arzt?) L. Roemheld.
146 Talipes Cavus Traceable to Occult Spina Bifida; Two Cases. (Der Klauenhohlfuss.) E. Bibergeil.
147 *Fracture of the Fingers. G. Hohmann.
148 Unfavorable Experiences with Eucalyptus Oil Inunctions in Scarlet Fever and Measles (Milne). M. Kretschmer.
149 Delicacy and Reliability of Salkowski's Test for Mercury in the Urine. J. Abelin.
150 Color Reaction of Skin Secretions Over Tuberculous Areas in Lung. (Eine Farbenreaktion des Hautsekretes über tuberkulösen Lungenabschnitten.) C. Fischer (Montana).
151 *Danger of Encountering Anaphylaxis in General Practice. (Anaphylaxiegefahr in der Praxis.) A. Wiedemann.
152 General Principles for Social Hygiene: Sexual Enlightenment. (Sexualpädagogische Fragen.) K. Grassmann.

147. Fracture of the Fingers.—Hohmann shows by a practical example the necessity of tying a broken finger to its sound neighbor as otherwise the finger is liable to grow crooked. The displacement from the dressings caused this in his case, compelling operative correction later.

151. Danger of Anaphylaxis.—Wiedemann reports a case of threatening anaphylaxis in a boy under 4 years following the internal administration of diphtheria antitoxin, two years after subcutaneous injection of the same. If help had not been constantly at hand the disturbances would probably have proved fatal. The antitoxin internally administered failed to display any influence on the laryngeal diphtheria but the anaphylactic symptoms developed very severe the following day, although beef antitoxin had been substituted for horse antitoxin when the disturbances were noted. He urges the necessity for three sources for diphtheria antitoxin, as the only means to be sure of avoiding the perils of anaphylaxis.

Wiener klinische Wochenschrift, Vienna

August 8, XXV, No. 32, pp. 1215-1246

153 Operative Treatment of Acute Circumscribed Phlebitis. K. Büdinger.
154 Nodose Erythema and Tuberculosis. R. Pollak.
155 *Paratyphoid Pyelonephritis with Kidney Calculi. B. Roman.
156 Accessory Mammary Glands. (Zur Kasuistik der sogenannten akzessorischen Milchdrüsen.) M. Fischer.
157 *The Phthalein Test of Kidney Function. F. Deutsch.

August 15, No. 33, pp. 1247-1278

158 Synthetic Antigens for the Meiostagmin Reaction with Cancer. G. Izar.
159 Central Innervation of the Bladder. (Beitrag zur Physiologie des Zwischenhirnes.) R. Lichtenstern.
160 Malformations Simulating Picture of Banti's Disease. (Fall von Persistenz der Vena umbilicalis mit anderen Anomalien unter dem Bilde des Morbus Banti.) W. Benque.
161 Manic Depression and Periodical Insanity as Manifestation of Catatonia. M. Urstein.
162 Prophylaxis of Malaria in Italy. S. Obst.
163 Peptolytic Ferments in Lumbar Puncture Fluid. (Vorkommen von peptolytischen Fermenten in der Lumbalflüssigkeit.) S. Szecsi.
164 Action of Cancer Juice on Cancer. (Zur Einwirkung des Karzinompresssaftes auf Karzinom und zur Oxyprotensäurevermehrung bei Karzinom.) H. Salomon and E. Freund. Commenced in No. 31.

155. Paratyphoid Pyelonephritis.—The cadaver of a woman of 43 presented kidney calculi and pyelonephritis due to the paratyphoid B bacillus although apparently free from paratyphoid lesions. Roman discusses the mechanism of the infection and compares the case with others on record in which the paratyphoid bacillus was found in local suppurations. In Ghon's five cases of the kind the meninges were the seat of the suppuration and the patients were all infants.

157-167. Phthalein Test of Kidney Functioning.—Deutsch tabulates the details of thirty-two cases of kidney disease in which he applied the Rowntree and Geraghty test. The results, he says, confirm the value of the test both for diagnosis and prognosis. (It was described in THE JOURNAL, 1912, lviii, 1038.) Sehrt's impressions are equally favorable.

Zentralblatt für Chirurgie, Leipsic

August 10, XXXIX, No. 32, pp. 1089-1120

165 Technic for Diagonal Suture. (Die Diagonalnaht.) G. Sultan.
166 Rupture of the Combined Gastrocnemius and Soleus. (Subkutane Ruptur des Triceps surae.) E. Sehrt.

August 17, No. 33, pp. 1121-1152

167 *Advantages of the Phthalein Test of Kidney Function. (Die Phenol-sulfo-phthaleinmethode zur Bestimmung der Nierenfunktion.) E. Sehrt. See Abstract 157.
168 Technic and After-Treatment of Resection of the Knee. W. Kausch.

August 24, No. 34, pp. 1153-1184

169 Improved Technic for Suture of Vessels. II. (Zur Technik der Gefässnaht.) E. Jeger and H. Lampl.
170 Ligation of Subclavian Artery. (Die Unterbindung der A. subclavia sin. in ihrem I. Abschnitt.) Wieting.
171 Disadvantages of Iodin Sterilization During Operations on Gastro-Intestinal Canal. (Zur Frage der Jodierung bei Operationen am Magen-Darmtrakt.) E. L. Fieber.

Zentralblatt für Gynäkologie, Leipsic

August 10, XXXVI, No. 32, pp. 1041-1072

172 Treatment of Retroflexed Uterus. A. Mayer.
173 *Postural Protection of Perineum. (Ueber eine weitere Anwendung der Beugelage beim Dammschutz.) M. Samuel.
174 Rapid Dilatation and Evacuation of the Uterus. (Zur schnellen Erweiterung der Gebärmutter, nebst einigen Bemerkungen zur Technik der Ausräumung.) E. Herz.

August 17, No. 33, pp. 1073-1096

175 Bacteria in Field of Operation and Their Significance for the Postoperative Course in Gynecology. (Ueber den Keimgehalt des Operationsfeldes bei gynäkologischen Laparotomien und seine Bedeutung für den postoperativen Verlauf.) E. Holzbach.
176 Draining After Extensive Operations for Uterine Cancer. (Drainage und Freund-Wertheim'sche Karzinomoperation.) W. Liepmann.

177 Inhibiting Action of Hypophysis Extract on Abortion: Three Cases. (Eine ungewöhnliche Wirkung des Hypophysenextraktes auf den gebärenden Uterus.) R. Patek.

August 24, No. 34, pp. 1097-1136

178 What the Peritoneum will Stand. (Was verträgt das Bauchfell, was verträgt es nicht?) A. Sippel.

179 Improved Technic for Operative Treatment of Vulvar Cancer. (Wie lassen sich die Dauerresultate bei der Operation des Vulvakarzinoms verbessern?) W. Stoeckel.

180 The Artificial Menopause After Removal of Uterine Adnexa. (Zur Bewertung des Ausfallserscheinungen nach Radikaloperationen bei entzündlichen Adnexerkrankungen.) H. Thaler.

181 Artificial Vagina Made from Rectum. (Vaginaldefekt und Scheidenbildung aus dem Mastdarm.) G. Schubert.

173. **Postural Protection of Perineum.**—Samuel four years ago called attention to the advantages of the woman's aiding straining during the second stage of labor by clasping her hands under her knees, her legs flexed on the abdomen as she lies on her back. This not only enlarges the pelvic outlet but it reenforces her straining efforts while reducing the intensity of the pain. He is convinced that this position will materially reduce the necessity for operative measures. The knees can be clasped in the same way with the patient lying on her side and this has superior advantages when the head presents. As this stage approaches, he has the woman lie on her side, and pull on her knees until the obstetrician can get hold of the chin through the posterior perineum. The woman must then release her knees and partly straighten the legs, the nurse holding the flexed knee of the upper leg about a foot above the level of the bed. This permits the head to be slowly and cautiously worked loose through the perineum by the obstetrician alone, the mother keeping entirely passive. He gives two illustrations of the method, and declares that it will certainly materially reduce the number of cases of perineal tears.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 4, XXXIII, No. 93, pp. 961-976

182 *Pellagra. (Osservazioni critiche a proposito del problema eziologico della pellagra.) E. Bertarelli.

183 Postoperative Dilatation of the Stomach; Immediate Cure by Change to the Prone Position. (Caso di gastroplegia postoperatoria.) G. Scola.

August 6, No. 94, pp. 977-984

184 Splenic Anemia in Girl of 3; Improvement Under Roentgenotherapy. G. Raffaelli.

August 8, No. 95, pp. 985-992

185 Resistance of Blood-Corpuscles in Acute Infections. (Sul comportamento delle resistenze globulari nelle malattie acute d'infezione.) P. Biffis.

August 11, No. 96, pp. 993-1008

186 *Tuberculous Peritonitis and Operative Treatment. (Tubercolosi peritoneale e sua cura chirurgica.) G. Bagozzi.

August 13, No. 97, pp. 1009-1016

187 *Epinephrin Organotherapy in Tuberculosis. (Dell'opoterapia surrenale nella tubercolosi polmonare.) T. Silvestri.

August 15, No. 98, pp. 1017-1024

188 Tonometric Findings Under Inhalation of Tobacco Smoke. P. Biffis.

August 18, No. 99, pp. 1025-1040

189 Vital Staining of the Blood. (Ricerche cliniche sulla sostanza granulofilamentosa dei globuli rossi colorabili a fresco.) L. Cecconi.

August 20, No. 100, pp. 1041-1048

190 Gastric Ulcer. (Sull'ulcera dello stomaco.) G. Stradiotti.

August 25, No. 102, pp. 1057-1072

191 *The Malaria Problem. D. Carazzi.

192 Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. C. Molon

182. **Pellagra.**—Bertarelli thinks that not enough attention has been paid to recent research on pellagra by certain Italians, notably Tizzoni's success in transmitting pellagra to monkeys, and his specific precipitin reaction, Vallardi's serodiagnosis of pellagra by the fixation of complement test, and Volpino and Magri's experimental work. The work of Sambon and Alessandrini has received more attention, and especially the statement that pellagra has been encountered in persons who have never eaten corn. Research in this line is particularly important and should be undertaken by physicians who live in pellagra-infested regions. Volpino states that pellagrins seem to possess a specific anaphylactic sensitiveness to subcutaneous injection of extracts of spoiled corn. If these statements are confirmed, this will prove a strong link in the chain of the corn theory, as also the fact that no new cases of pellagra seem to develop in the regions in which the government has instituted measures to prevent the use of spoiled corn. The old pellagrins are gradually dying off and no new cases can be found although, except for the hygiene of the maize, the habits and customs have remained the same in the community. It is difficult to reconcile the lack of new cases with the infectious theory, as the old pellagrins persist in sufficient numbers to prove an ample source for infection if such were possible, and nothing has been done to remove any other factors of the infection if such exist. The evidence to date, Bertarelli adds, seems to be in favor of the assumption that pellagra is an intoxication, and that although the old pellagrins still remain in the environment, yet no new cases develop as the source of the intoxication—the spoiled corn—has been done away with. The whole question is now in the hands of the general practitioners in regions infested with pellagra; to their critical observation and compilation of facts we must look to decide the question once for all.

186. **Operative Treatment of Tuberculous Peritonitis.**—Bagozzi is convinced that old peritoneal effusions lose their bactericidal power but if they are evacuated and new effusions form, this brings an influx of new bactericidal influences. This is his explanation of the benefit unmistakably derived from operative measures in many cases of tuberculous peritonitis. In the last ten years an operation was undertaken in 187 cases of the kind at the Milan hospital; the mortality was 25 per cent. as such patients were not referred to the surgical service until all other measures had been tried and failed, and in a number of the fatal cases other organs were involved in the tuberculosis. He states that the ultimate outcome was known to be very favorable in a large proportion of cases. No other measure gives comparable results, but involvement of other organs is an absolute contra-indication. The best time for the operation is after the acute febrile stage, the end of the first period, but without waiting until the patient becomes debilitated and loses flesh or other organs become involved. Improvement or a cure was realized in both forms of tuberculous peritonitis, with and without effusion. One patient with a fibrinoplastic tuberculous peritonitis recovered completely after a simple laparotomy. The changes set up in the tissues evidently rouse the defensive powers and the organism grapples anew with the infection and this time may conquer.

187. **Epinephrin Organotherapy in Pulmonary Tuberculosis.**—Silvestri thinks that the condition known as the phthisic habitus must be due in part to defective functioning of the ductless glands and that this is an important factor in the course of pulmonary tuberculosis. On these premises he has applied adrenal extract as an adjuvant in the treatment of fourteen tuberculous patients, especially in the incipient cases, and states that in ten the results surpassed all anticipations. He used a commercial preparation in some cases and in others the fresh suprarenal capsule. The improvement in two typical cases reported has been progressive during the year since this treatment was instituted and a complete cure seems at hand. In one of the cases the gravity of the symptoms when the patient was first seen, the progressive improvement and prompt aggravation of symptoms when epinephrin treatment was suspended for a time, with return to progressive improvement when it was resumed again—all point to a specific influence from the treatment. He gave calcium salts at the same time, but these alone did not benefit. Only when the adrenal extract accompanied the calcium did the latter seem to be utilized. Primary or secondary insufficiency of adrenal functioning he thinks is the rule in pulmonary tuberculosis as also abnormal utilization of calcium, both of which are combated by the adrenal-calcium treatment.

191. **The Malaria Problem.**—Carazzi presents evidence to sustain his assertion that in all probability man is merely an incidental host for the malaria germ. Some animal must be the habitual host, and until this animal is discovered all attempts to eradicate malaria are liable to fail. Certain facts observed suggest that possibly the bat may prove to be this third host, as this is known to harbor a parasite extremely similar to that of malaria. Search should be made for this third host of the malaria germ, investigating in particular

whether certain species of small mammals, bats, birds, night hawks, etc., can be found in malarial countries and not elsewhere, and experimentally feeding them with infected anopheles.

Policlinico, Rome

July 21, XIX, No. 30, pp. 1077-1112

193 Postoperative Tumors in Abdominal Wall; Two Cases. (Tumori infiammatori cronici, postoperatori, delle pareti addominali.) G. Solaro.

July 28, No. 31, pp. 1113-1138

194 Polycythemia. (Della policitemia rubra.) M. Ferretti.
195 Intravenous Injections of Mercuric Chlorid in Treatment of Typhoid and Erysipelas. G. E. Senni and P. Ercolani.

August 4, No. 32, pp. 1139-1184

196 Physiologic Action of Oxygenated Baths. L. Coleschi.
197 Hernia of the Ureter; Two Cases. G. Morandini.
198 Terminal Tuberculosis. G. Jona.

August 11, No. 33, pp. 1185-1225

199 *Chemotherapy of Experimental Cancer. L. Grillo.
200 Resisting Powers of the Blood Corpuscles in Acute Infections. (La resistenza globulare nelle malattie acute da infezione.) G. Ayala.
201 Principles for Treatment of Pulmonary Tuberculosis with Artificial Pneumothorax. U. Carpi.

August 18, No. 34, pp. 1226-1260

202 Hemorrhoids in Connection with Gastric Disturbances. (Le emorroide nelle malattie gastriche.) V. Cominotti.

199. **Chemotherapy of Experimental Cancer.**—Grillo reports from the laboratory in charge of Gosio that experiments with the various methods of chemotherapy recently introduced by Wassermann, Neuberg and others have given good results, confirming the assertions of the German writers. But he found that a simpler technic seems to be equally successful, the mouse carcinomas subsiding effectually under a simple 1 per thousand solution of the tellurite in physiologic solution. He inoculated about fifty mice as controls to study the spontaneous evolution of the carcinoma; in none of these animals was there any sign of spontaneous retrogression of the tumor such as was evident in the animals injected with the tellurite. (Compare with editorial in THE JOURNAL Aug. 31, 1912, p. 724.)

Semana Medica, Buenos Aires

June 27, XIX, No. 26, pp. 1185-1236

203 Fracture of the Olecranon. (Fracturas del olecrano.) L. Bard.
204 Hypophysis Extract in Therapeutics. (Aplicaciones terapeuticas del principio activo leiomiocinetico de la hipofisis.) M. I. Puiggari.
205 Origin and Dietetic Treatment of Mucomembranous Enterocolitis. J. R. Goyena.

July 4, No. 27, pp. 1-48

206 Experiences with Salvarsan in Syphilis. (Experiencia de un año con el "606.") J. N. Posadas.
207 Dosage by Age. (De como hacer y recordar una tabla de dosificacion por edades.) N. C. Capece.

Hospitalstidende, Copenhagen

August 14, LV, No. 33, pp. 905-928

208 Case of Pigmented Urticaria. H. Boas.

August 21, No. 34, pp. 929-952

209 *The Reaction of the Blood. (Blodets Reaktion.) C. Lundsgaard.

August 28, No. 35, pp. 953-976

210 Traumatic Pseudomeningocele. A. Helsted.

209. **The Reaction of the Blood.**—Lundsgaard discusses the value of the various methods in vogue for estimating the reaction of the blood and describes the results of his own efforts to determine the normal standard under standard conditions of temperature, etc. His research confirms anew the constancy of the reaction of the blood which, he states, is a trifle toward the alkaline side of the neutral point.

Hygiea, Stockholm

July, LXXIV, No. 7, pp. 737-848

211 'Repeated Laparotomies. (Om tidiga relaparotomier.) L. Norrlin.
212 Syphilis in Animals. (Om syfilis hos djur.) J. Almkvist.
213 Pathogenesis of Tabes. (Några nyare studier till tabes patogenes.) N. R. E. Antoni.

211. **Opening the Abdomen Again.**—Norrlin reports in detail twenty cases in which the abdomen had to be opened again for various reasons before the laparotomy wound had healed. Some are instructive from the mistakes made at the first laparotomy. In some cases the lesions were unusually severe so that the mortality of 50 per cent. in these early relaparotomies is not surprising. In seven cases the trouble had been gangrenous appendicitis. In another case the assumed appendicitis proved apparently to be cancer with involvement of neighboring lymph-nodes. Necropsy, however, revealed that the trouble was a tuberculous process. The case teaches the danger of neglecting minute investigation of the previous history, and the difficulty of a correct diagnosis even with the abdomen open before one. Another patient passed through three laparotomies in three days and had another later, emerging finally cured from the results of injury of the abdomen from a flying chip of metal.

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214 *Chronic Duodenal Ulcer and Its Early Diagnosis. (Det kroniske Duodenalsaar og dets "Frühdiagnose.") O. Borchgrevink.
215 Tuberculosis at Christiania. (Lungetuberkulose i Kristiania 1901-1910.) Y. Ustvedt.
216 Anatomic Findings with Epilepsy and Microcephaly. (Anatomiske fund ved enkelte sjeldnere hjernesygdomme.) F. Harbitz.
217 Surgery of the Pericardium. H. Wille.

214. **Chronic Duodenal Ulcer.**—Borchgrevink devotes sixty-eight pages to this study based on twelve cases. The previous history suggested the diagnosis in every instance with one exception. In nine cases it was confirmed by the operation and in two at necropsy. The first symptoms had been observed from twenty to twenty-six years before in four patients; from eight to eleven years in three, and from three to six years in four. In one case the first attack of pain had occurred only two weeks before. The pain in all the cases was in the epigastrium, but it radiated differently in different patients, spreading to the back, right side of abdomen, genitals or breast. There was tenderness in the right epigastrium only in two cases. The periodicity of the attacks and the change from the severe pain to long intervals of total freedom from pain were pronounced and characteristic. Two patients suffered from vomiting and five had hemorrhage, three succumbing to the loss of blood. The tendency to hemorrhage was first observed in the twentieth, eighteenth, sixth, fifth or third year after the first symptoms. In seven of the patients the attack of pain came on between one and a half and two and a half hours after the meal, in another about forty-five minutes after the meal, reaching its height in less than two hours. Exercise seemed to bring on the pains earlier than when the patient was at rest. The objective findings were less instructive than the subjective. Gastric secretion did not seem to be influenced by the ulceration in the duodenum but the motor functioning of the stomach was inclined to be abnormally active. As time passed the free intervals became shorter and the pain developed earlier after the meals. A duodenal ulcer may set up hemorrhage in consequence of the influence of an operation elsewhere in the abdomen. In regard to medical treatment of duodenal ulcer, he reminds us that we have to do here with an affection which may have months and even years of free intervals, so that the assumption of a cure under internal measures may prove in the end to be erroneous. At the same time, medical measures may arrest various symptoms; the pains subside while the patient stays in bed. Dieting has also a favorable influence, especially restriction to milk. In one old case the symptoms recurred with unusual severity, and the patient found that temporary abstention from all food gave the most relief. Sodium and bismuth were the most effectual drugs, but even these often failed. The cure has been complete to date in all his operative cases.

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218 Two Cases of Ureterocele. V. Meisen.

August 22, No. 34, pp. 1205-1234

219 Valvular Action as Cause of Inflammatory Glaucoma. (Om en Klapvirkning at Vortexsinoskleralpinden som Aarsag til det saakaldte inflammatoriske Glaukom.) C. F. Heerfordt.

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XVII, No. 7, pp. 477-560. Last indexed July 6, p. 78

220 Successful Operation for Brain Tumor. (Ett med lyckligt utgång opereradt fall af intrakraniell tumör.) H. C. Jacobæus and G. Nyström.
221 Chemistry of Homogentisic Acid. I. (Ytterligare bidrag till kännedomen om homogentisinsyrans kemi. I.) C. T. Mörner.